368Z

IVS DVR

User Manual

- Intelligent Video Surveillance
- GUI Display with USB Mouse Control

Please read instructions thoroughly before operation and retain it for future reference.

For the actual display & operation, please refer to your DVR in hand.

AVD744C_Manual_V1.5

IMPORTANT SAFEGUARD

	CAUTION	
	RISK OF ELECTRIC SHOCK	

CAUTION:

To reduce the risk of electric shock, do not expose this apparatus to rain or moisture. Only operate this apparatus from the type of power source indicated on the label. The company shall not be liable for any damages arising out of any improper use, even if we have been advised of the possibility of such damages.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

All lead-free products offered by the company comply with the requirements of the European law on the Restriction of Hazardous Substances (RoHS) directive, which means our manufacture processes and products are strictly “lead-free” and without the hazardous substances cited in the directive.

The crossed-out wheeled bin mark symbolizes that within the European Union the product must be collected separately at the product end-of-life. This applies to your product and any peripherals marked with this symbol. Do not dispose of these products as unsorted municipal waste. Contact your local dealer for procedures for recycling this equipment.

This apparatus is manufactured to comply with the radio interference requirements.

Federal Communications Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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The information in this manual was current when released. We reserve the right to revise or remove any content in this manual at any time. We do not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of this manual. For the actual display & operation, please refer to your DVR in hand. The content of this manual is subject to change without notice.

Grounding

This is a Safety Class 1 Product (provided with a protective earthing ground incorporated in the power cord). The mains plug shall only be inserted in a socket outlet provided with a protective earth contact. Any interruption of the protective conductor inside or outside of the instrument is likely to make the instrument dangerous. Intentional interruption is prohibited.

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We are pleased to provide our modifications to the Linux Kernel, as well as a few new commands, and some tools to get you into the code. The codes are provided on the FTP site, and please download them from the following site or you can refer to your distributor:

http://download.dvrtw.com.tw/GPL/076D_Series/arm-linux-2.6.tar.gz

TABLE OF CONTENTS

1. BEFORE USING THIS DVR 1

1.1 Package Content 1
1.2 Front Panel 1
1.3 Rear Panel 2

2. CONNECTION AND SETUP 4

2.1 SATA HDD Installation 4
2.2 Camera Connection 5
2.2.1 Normal Camera Connection 5
2.2.2 DCCS Camera Connection 5
2.2.3 PTZ Camera Connection 5
2.3 DVR Power On 7
2.4 Date and Time Setting 7
2.5 Clear Hard Disk 8
2.6 Password Setting 8

3. GUI DISPLAY WITH USB MOUSE CONTROL 9

3.1 Connect USB Mouse 9
3.2 Quick Menu Bar 9
3.2.1 Channel Switch 9
3.2.2 PTZ Control Panel 10
3.3 Main Menu 10

4. BASIC OPERATION 11

4.1 Live Page 11
4.2 Record Icon 11
4.3 Playback 11
4.3.1 Playback Control 12
4.3.2 Event Search 12
4.3.3 Audio Playback 12
4.4 User Level Switch 13
4.5 VGA Output Resolution Support 13

5. MAIN MENU 14

5.1 QUICK START 14
5.1.1 GENERAL 14
5.1.2 TIME SETUP 15
5.2 DATE SETUP 16
5.2.1 DATE INFO 16
5.2.2 DAYLIGHT 16
5.3 SYSTEM 17
5.3.1 TOOLS 17
5.3.2 SYSTEM INFO 18
5.3.3 BACKUP DATA (USB) / (DVD) 19
5.3.4 BACKUP LOG (USB) 20
5.4 EVENT INFORMATION 21
5.4.1 QUICK SEARCH 21
5.4.2 EVENT SEARCH 21
5.4.3 HDD INFO 22

5.4.4 EVENT LOG 22
5.5 ADVANCED CONFIG 22
5.5.1 CAMERA 22
5.5.2 DETECTION 23
5.5.3 ALERT 24
5.5.4 NETWORK 25
5.5.6 DISPLAY 28
5.5.7 RECORD 29
5.5.8 DEVICES 30
5.5.9 DCCS 31
5.5.10 IVS 31
5.5.11 NOTIFY 36
5.6 SCHEDULE SETTING 36
5.6.1 RECORD 36
5.6.2 DETECTION 37
5.6.3 ALARM 37

6. REMOTE OPERATION 38

6.1 Supplied Licensed Software 38
6.1.1 Installation & Network Connection 38
6.1.2 Control Panel Overview 39
6.1.3. General Operation 41
6.1.4. E-Map 43
6.2 Web Browser 49
6.2.1 Event Playback & Download 51
6.2.2 IVS Statistics 52

APPENDIX 1 SPECIFICATIONS 53

APPENDIX 2 PIN CONFIGURATION 59

APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST 62

APPENDIX 4 COMPATIBLE SATA HDD LIST 63

APPENDIX 5 MAIN MENU STRUCTURE 64

APPENDIX 6 DVR BATTERY REPLACEMENT 66

1. BEFORE USING THIS DVR

1.1 Package Content

☐ DVR
☐ IR Remote Controller
☐ IR Receiver Extension Cable
☐ CD Manual
☐ HDD screws
☐ Manual for IR Remote Controller
☐ DVR Quick Start
☐ Adapter & Power cord
☐ 9 or 25 Pin DSUB Connector
☐ USB Mouse

1.2 Front Panel

1) LED Indicators

DVR is powered on.
HDD is reading or recording.
An alarm is triggered.
Timer recording is on.
Under playback status.

2) ⏏ *(For AVD748BD, 746BD, 744BD & 744CD Only)*

Press "⏏" to open / close the DVD Writer.

3) CH1 ~ 16 / 1 ~ 8 / 1 ~ 4

Press the channel number buttons to select the channel to display.

4) ⊞

Press to show the 4 channel display mode.

5) SEQ

Press to display each channel in full screen one by one starting from CH1. When the last channel is displayed, it will repeat from CH1 again. To exit this mode, press "SEQ" again.

6) SLOW

In the playback mode, press to show slow playback.

7) ZOOM

Press to enlarge the picture of selected channel in the FRAME or FIELD recording mode.

8) PLAY

Press to playback the latest recorded data.

9) LIST (Event List Search)

Press to quickly search the recorded files by event lists: RECORD / MOTION / ALARM / TIME / HUMAN DETECTION / IVS / STATISTIC, or select FULL to show all the event logs.

To quickly search the time you want, select "QUICK SEARCH". For details, please refer to "5.4.1 QUICK SEARCH" at page 21.

10) MENU

Press "MENU" to enter the main menu.

11) ENTER

Press "ENTER" to confirm the setting.

12) ⏸ (▲) / ■ (▼) / ⏮ (◄) / ⏭ (►)

Press ▲ / ▼ / ◄ / ► to move up / down / left / right.
In the playback mode:
Press "⏸" to pause playback.
Press "■" to stop playback.

Press "⏩" to fast forward.

Press "⏪" to fast rewind.

13) AUDIO (SLOW + ZOOM)

Press "SLOW" + "ZOOM" to select live or playback audio from audio channel 1~4.

Live audio from audio channel 1~4 (indicated in white).

Playback audio from audio channel 1~4 (indicated in yellow).

Audio channel unselected

14) P.T.Z. (⊞ + SEQ)

Press "⊞" + "SEQ" at the same time to enter / exit the PTZ control mode.

15) USB port

There are two USB ports on the front panel, one for connecting your USB mouse for mouse control, and the other one for connecting your USB flash drive for video backup.

Note: It's not allowed to have two USB mice or two USB flash drives connected on the front panel.

Note: For the compatible USB flash drive list, please refer to "APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST" at page 62.

1.3 Rear Panel

1) 75Ω / HI-IMPEDANCE *(For AVD748BD & 746BD Only)*

When using Loop function, please switch to HI-IMPEDANCE. When you don't use Loop function, please switch to 75Ω.

2) VIDEO IN (1 ~ 16 / 1 ~ 8 / 1 ~ 4): Connect to the video connector of a camera.

VIDEO LOOP (1 ~ 16 / 1 ~ 8): Video output connector.

Note: The DVR will automatically detect the video system of the camera, please make sure that the cameras are properly connected to the DVR and power-supplied before the DVR is turned on.

3) AUDIO IN (1~4)

Connect to the audio connector of a camera if the camera supports audio recording.

Note: To make a video backup with audio, make sure the camera which supports the audio function is connected to the video-in channel and audio-in channel. For example, the audio data from audio CH1 will be recorded with the video data from video CH1.

4) AUDIO OUT

Connect to a speaker with 1 mono audio output.

Note: To know how many audio outputs your DVR supports, please refer to its specifications.

5) MONITOR

Connect to a CRT monitor for video output.

Note: While connecting to a CRT monitor, it's also supported to connect to a LCD monitor simultaneously for dual video output.

6) CALL

Connect to a monitor specific for sequence display.

7) VGA

Connect a LCD monitor directly.

Note: While connecting to a LCD monitor, it's also supported to connect to a CRT monitor simultaneously for dual video output.

8) IR

Connect the IR receiver extension line for remote control.

9) EXTERNAL I/O

This port is used to connect external devices (such as speed dome cameras or external alarm, etc).

10) LAN

Connect to Internet by LAN cable.

11) DC 19V

Connect to the supplied adapter.

12) Power Switch

Switch to "**I**" to turn on the power, and "O" to turn off the power.

2. CONNECTION AND SETUP

Before the DVR is powered on, make sure you have installed a hard disk and connected at least one camera. For details, please refer to the following sections.

Note: The DVR is designed to automatically detect the video system of the connected cameras (NTSC or PAL). To make sure the system detection is correct, please check if the cameras are connected to the DVR and power-supplied before the DVR is powered on.

2.1 SATA HDD Installation

A SATA HDD must be installed before the DVR is powered on.

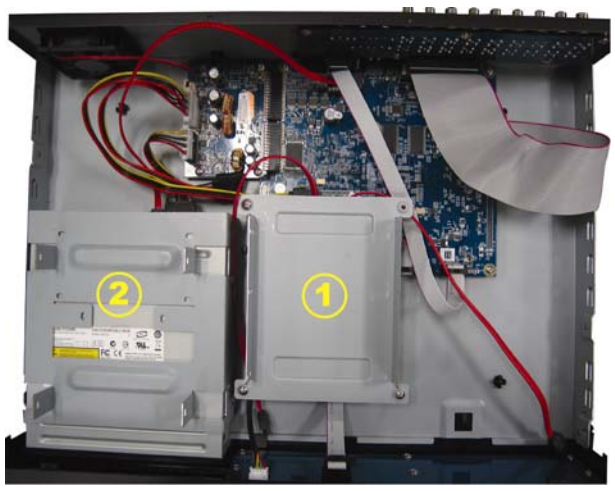
Note: It's recommended to clear all data in the hard disk when the DVR is powered on and the date & time are set correctly to ensure the recorded data are not mixed with other data previously saved in the same hard disk. For details, please refer to "2.5 Clear Hard Disk" at page 8.

- **For AVD748BD & 746BD**

Step1: Loose the screws on the upper cover and open the upper cover of the DVR.

Note: The DVR cover is made of metal. Please be careful with its edge when you remove the cover.

Step2: There are two HDD brackets for this DVR as indicated on the right picture.

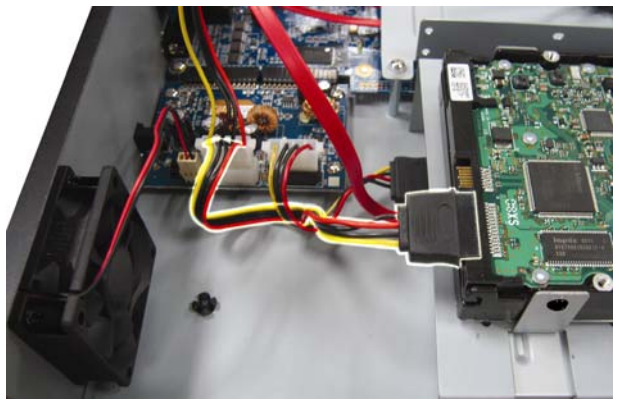


2-1 To install on the first bracket

Remove the bracket, and align the screw holes of the bracket with the HDD's screw holes. Make sure the PCB side of the HDD is facing up.

Fasten the HDD to the bracket, and connect the power connector and data bus connector to the HDD. Then, replace the bracket to DVR.

2-2 To install on the second bracket



Connect the power connector and data bus connector to the HDD.

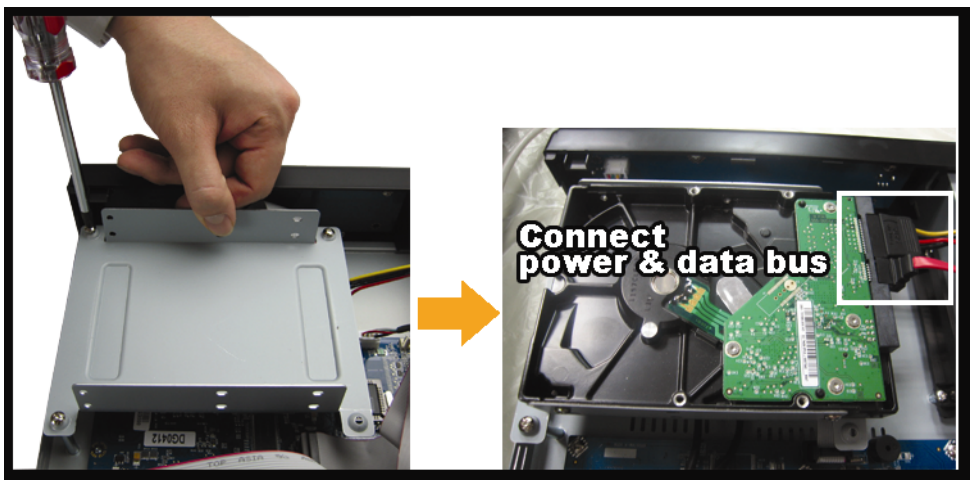
When connecting the power cable, make sure the cable is passed through the power cable of DVD writer. This is to prevent the HDD power cable from interfering with the fan spinning.

Align the screw holes of the bracket with the HDD's screw holes. Make sure the PCB side of the HDD is facing up. Then, fasten the HDD to the bracket.

Step3: Close the upper cover of the DVR, and fasten all the screws you loosened in Step1.

- **For AVD744B, AV744BD, AVD744C & AVD744CD**

Step1: Remove the screws on the top cover of DVR, and remove the top cover.
Step2: Remove the HDD bracket. Then, with the PCB side facing up, connect the compatible HDD to the power connector and data bus connector.
Step3: Put the compatible HDD in the bracket, and fasten it with the supplied screws, two for each side.
Step4: Replace the bracket back to the DVR.



Step5: Replace the top cover and fasten the screws you loosened in Step1.

2.2 Camera Connection

The cameras must be connected and power-supplied before the DVR is powered on. Connect the camera with the indicated power supply. Then, connect the camera video output to the DVR video input port with a coaxial cable or RCA cable with BNC connectors.

Note: For detailed DVR video input ports, please refer to "1.3 Rear Panel" at page 2.

2.2.1 Normal Camera Connection

Note: For detailed camera installation and connection, please refer to its own user manual.

1) Connecting to DVR video input

   Connect the camera video output to the DVR video input port with a coaxial cable or RCA line with BNC connector.

2) Connecting to DVR audio input (Optional)

   Connect the camera audio output to the DVR audio input port with a coaxial cable or RCA cable with BNC connectors.

3) Connecting to power

   Connect the camera with indicated power supply and make sure it's power-supplied.

2.2.2 DCCS Camera Connection

1) Connecting to DVR video input

   Connect the camera video output to the DVR video input port with a coaxial cable, or a RCA cable with BNC connectors.

2) Connecting to power

   Connect the camera with indicated power supply.

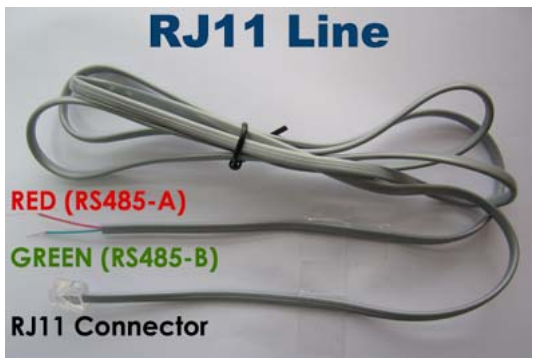
3) Configuring camera parameters (For zoom lens control cameras only)

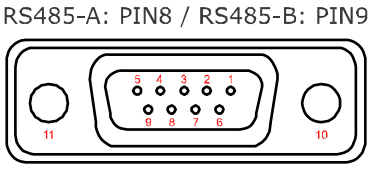
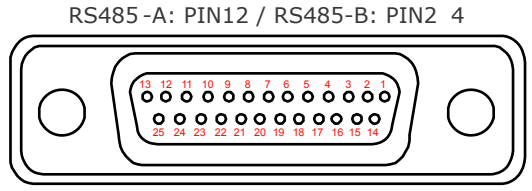
   Set camera parameters when the DVR is powered on. For details, please refer to the camera user manual.

2.2.3 PTZ Camera Connection

The following description is taking our brand's PTZ camera as an example.

For detailed PIN / port connection, please refer to "APPENDIX 2 PIN CONFIGURATION" at page 59. For DVR setting to control the PTZ camera, please refer to "5.5.7 RECORD" at page 29. For detailed PTZ camera control and operation, please refer to its own user manual.

RJ11 cable
RS485-A: **Red wire**
RS485-B: **Green wire**

The RJ11 cable is not supplied in the sales package.

9 PIN D-Sub Connector	25 PIN D-Sub Connector
RS485-A: **PIN 8** RS485-B: **PIN 9**	RS485-A: **PIN 12** RS485-B: **PIN 24**
Solder Side of 9-pin D-Sub connector RS485-A: PIN8 / RS485-B: PIN9 	Solder Side of 25-pin D-Sub connector RS485-A: PIN12 / RS485-B: PIN2 4 
D-Sub connector is supplied with the DVR package.	

STEP 1: Get a RJ11 cable with the proper length to your connection.

Different RJ11 connector may have different wire layout, so the connection might be different. If you cannot control the DVR after connection, please reverse the RJ11 cable connection with the DVR.

STEP 2: Remove one end of the insulating coating of the RJ11 cable.

Remove one end of the insulating coating of the RJ11 cable to find the RS485-A and the RS485-B wires, and remove the insulating coating to reveal the naked wires for further connection.

STEP 3: Twist the RS485-A and RS485-B wires of the RJ11 cable and the speed dome camera together.

Twist the RS485-A (red) and RS485-B (green) wires of the RJ11 cable to the RS485-A (brown) and RS485-B (orange) wires of the speed dome camera. To protect the naked wires, use the insulation tape to cover on the twisted wires.

STEP 4: Connect the other end of the RJ11 cable to DVR.

Solder the RS485-A (red) and RS485-B (green) wires of the RJ11 cable to the corresponding pins on the solder side of the 9 or 25 PIN D-Sub connector (as shown above).

STEP 5: Set the speed dome camera at the DVR side.

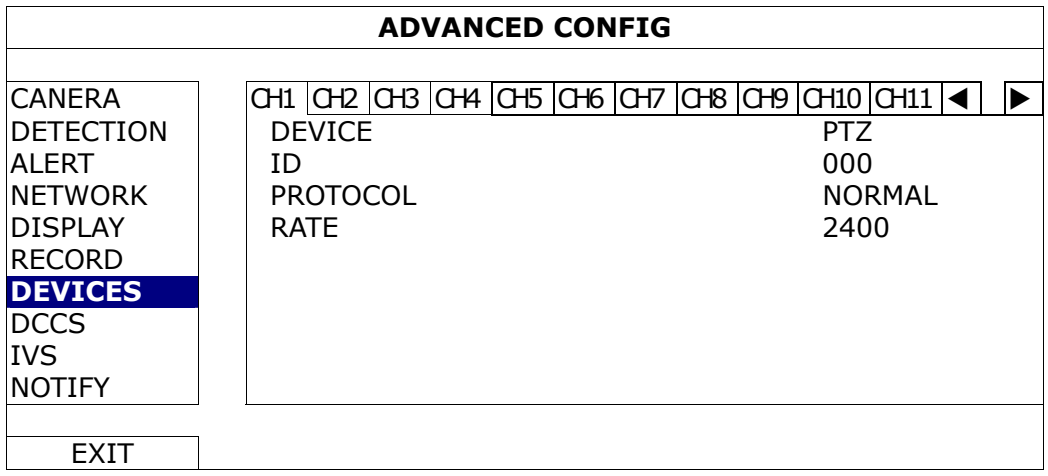
Go to “ADVANCED CONFIG” → “DEVICES” to set the speed dome camera.

a) Select the device to “PTZ”.

b) Set the ID to the value the same as the one set in the speed dome camera. The default ID of the camera is 000.

c) Select the protocol to “NORMAL”.

d) Set the baud rate to the value the same as the one set in the speed dome camera. The default baud rate of the camera is 2400.



2.3 DVR Power On

This device should be operated only with the type of power source indicated on the manufacturer's label. Connect the indicated AC power cord to the power adapter, and plug into an electrical outlet. The power LED will be on.

Note: Before the DVR is powered on, make sure the cameras are connected and power-supplied for the detection of the camera video system to be correct.

Note: To ensure that your DVR works constantly and properly, it's recommended to use an UPS, Uninterruptible Power Supply (Optional), for continuously operation.

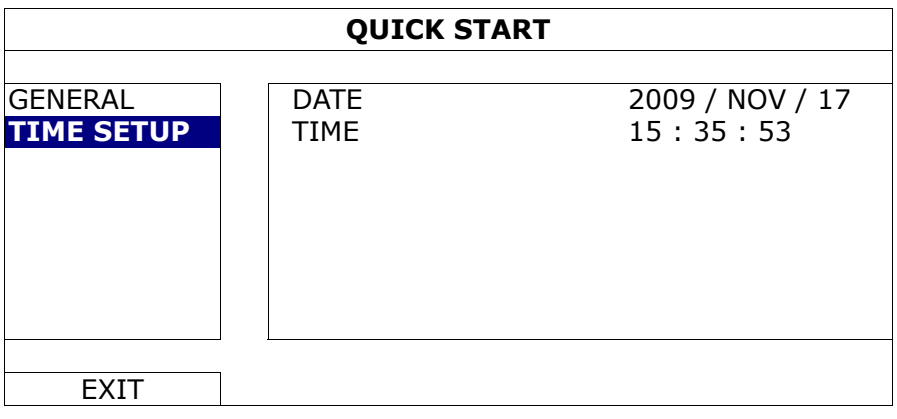
2.4 Date and Time Setting

Before operating your DVR, please set the date and time on your DVR **FIRST**.

Note: Please DO NOT change the date or time of your DVR after the recording function is activated. Otherwise, the recorded data will be disordered and you will not be able to find the recorded file to backup by time search. If users change the date or time accidentally when the recording function is activated, it's recommended to clear all HDD data, and start recording again.

Note: For the first time to use the DVR, please power it on for at least 48 hours continuously after the date & time is set correctly. It helps to prevent DVR time from resetting after the disconnecting of DVR power. If the DVR time resets after the disconnecting of DVR power, for example, caused by a power outage, the battery might run out and please replace the battery as described in "APPENDIX 6 DVR BATTERY REPLACEMENT" at page 66.

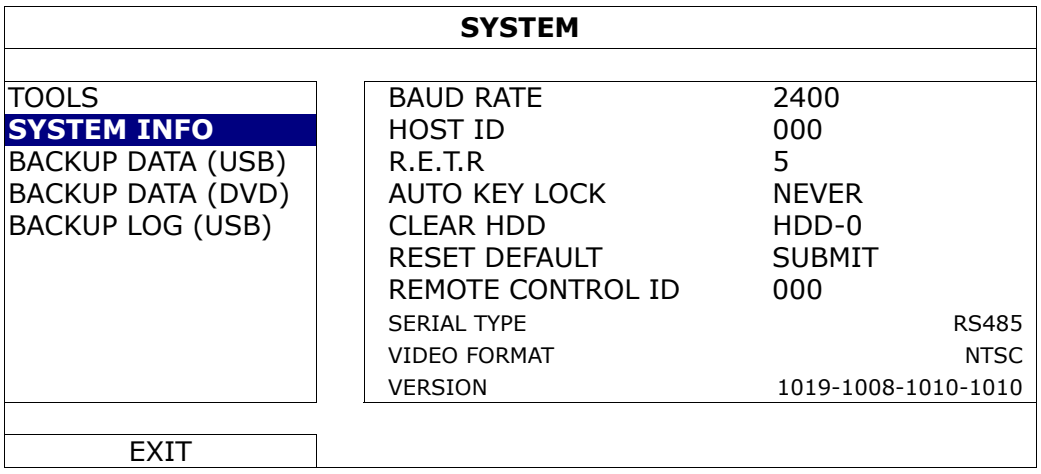
Right-click to enter the DVR password with the password keypad. The default administrator password is 0000. The status will be changed from (key lock) to (administrator). Then, right-click to show the main menu, and select "QUICK START" → "TIME SETUP" to set the date & time.



2.5 Clear Hard Disk

It's recommended to clear all data in the hard disk for the first time to use this DVR to ensure the recorded data are not mixed with other data previously saved in the same hard disk.

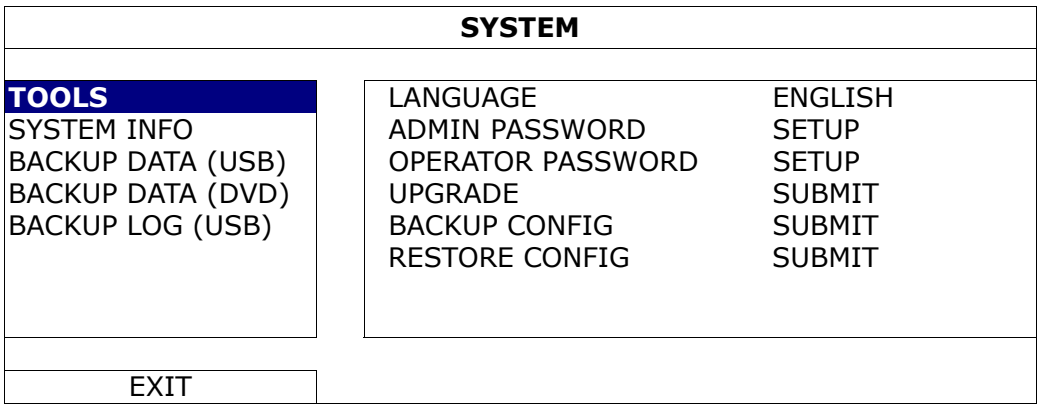
Right-click to show the main menu, and select "SYSTEM" → "SYSTEM INFO" → "CLEAR HDD". The DVR will reboot when HDD data are cleared. For details, please refer to "5.3.2 SYSTEM INFO" at page 18.



2.6 Password Setting

Right-click to show the main menu, and select "SYSTEM" → "TOOLS" to change the DVR password.

There are two user levels: ADMIN & OPERATOR. For details, please refer to "5.3.1 TOOLS" at page 17.



3. GUI DISPLAY WITH USB MOUSE CONTROL

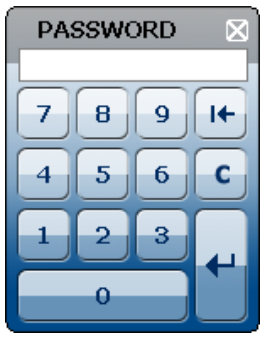
3.1 Connect USB Mouse

Connect your USB mouse to one of the USB ports on the DVR front panel, and check if there's a mouse icon ( ) on the screen, indicating the USB mouse is detected properly.

Move your mouse to enter the DVR password with the password keypad. The default administrator password is **0000**. The status will be changed from (key lock) to (administrator), and the quick menu bar appears on the left side of the screen.

Note: There are two user levels for DVR access which can be set in the main menu "SYSTEM" → "TOOLS". For details, please refer to "5.3.1 TOOLS" at page 17.

Password Input



Quick Menu: Close

3.2 Quick Menu Bar

Move to the arrow mark to extend the quick menu bar and show the five functions as follows:

Quick Menu: Open

	Click to show the channel switch panel and select the channel you want. For details, please refer to "3.2.1 Channel Switch" at page 9.
	Click to display the playback control panel, and click to play the latest recorded video clip, or click to enter the search list. For details, please refer to "4.3 Playback" at page 11.
	Switch to the channel you want first, and click to enter the zoom-in mode. In this mode, click and drag the red frame on the bottom left of the screen to move to the place you want to see. To exit this mode, click ☒.
	Click to select the audio channel you want: In the live mode, only the live audio channels can be selected. In the playback mode, live and playback audio channels can be selected.
	Click to enter the PTZ mode and show the PTZ camera control panel. For details, please refer to "3.2.2 PTZ Control Panel" at page 10.
	Click to show the power off panel to either halt or reboot the system.

3.2.1 Channel Switch

Click CH on the quick menu bar to display the panel as follows:

1~16	Video Channel Number	Click to switch to the channel you want in full screen.
	Sequence Display	Click to display each channel in full screen one by one starting from CH1. When the last channel is displayed, it will repeat from CH1 again. When this function is on, will be shown on the status bar.
	Quad Display	Press to show the 4-channel display mode.
	9-Cut Display	Press to show the 9-channel display mode.
	16-Cut Display	Press to show the 16-channel display mode.

3.2.2 PTZ Control Panel

Note: In the PTZ control mode, hot point is supported to move the camera view to the specified point after a click.

Click on the quick menu bar to display the panel as follows:

	Camera Menu	Click to enter the camera main menu. For details about each camera menu, please refer to its own user manual.
	Enter	Click to confirm your selection / enter the menu.
/ / /	Up / Down / Left / Right	Click to move your selection up / down / left / right, or change settings.
/	Iris + / Iris -	This two buttons are designed for the PTZ camera which uses Pelco-D to control. To know the actions after clicking Iris + and Iris -, please refer to the camera's user manual.
/	Zoom in / out max	Click to zoom in on the image to the largest / zoom out on the image to its original size.
/	Zoom in / out	Click to zoom in / out the image.
/	Focus near / far	Click to adjust the focus of the image.
	Auto mode	Click to activate the auto function. Before using it, you need to assign a specific function that will be enabled when "AUTO" is clicked. For details, please refer to the user manual of the PTZ camera.
	Preset point	Click to enter the PTZ preset point you want to see.

3.3 Main Menu

Right-click anywhere on the screen to show the main menu as follows, and right-click again to exit.

For details about each menu and its sub-menus, please refer to "5. MAIN MENU' at page 14.
For details about the menu structure, please refer to "APPENDIX 5 MAIN MENU STRUCTURE" at page 64.

Main Menu

	QUICK START	Click to set the status display, image settings, and date & time.
	DATE SETUP	Click to set the date display and daylight saving.
	SYSTEM	Click to set the system configurations.
	EVENT INFORMATION	Click to enter the event search menu.
	ADVANCED CONFIG	Click to set CAMERA, DETECTION, ALERT, NETWORK, SNTP, DISPLAY, RECORD, DEVICES, DCCS, IVS & NOTIFY.
	SCHEDULE SETTING	Click to set record timer and detection timer.

4. BASIC OPERATION

4.1 Live Page

Icon	Function	Icon	Function	Icon	Function
	Live audio channel (1~4)		Playback audio channel (1~4)		Audio channel off
	Digital zoom on		Digital zoom off		Timer recording
	Network disconnected		Internet connected		LAN connected
	USB mouse connected		USB flash drive / device connected		No USB device connected
	Key lock		PTZ mode on		HDD overwrite
	Administrator		Operator		Sequence
	Recording		Alarm event		Motion event
	Virtual fence event		One way pass event		Scene Change event
	Human detection event		Flow counting enabled		Smart zoom
	Record mode: Frame		Record mode: Field		Record mode: CIF
	DCCS connection OK		DCCS connection failed		

4.2 Record Icon

1) Manual Recording

By defaults, manual recording is on ( ) when the DVR is powered on and a HDD is installed.

2) Event Recording

The event icons, / / / / / , show on the screen when their respective events occur and the related record function is on.

3) Timer Recording

When timer recording is on, you will see " " on the screen.

4) HDD Overwritten

Be defaults, the HDD overwritten function is set to ON, and " " will be shown on the screen.

4.3 Playback

Click " " on the quick menu bar to display the playback control panel, and click to play the latest recorded video clip, or click to enter the search list.

Note: There must be at least 8192 images of recorded data for playback to work properly. If not, the device will stop playback. For example, if the IPS is set to 30, the recording time should be at least 273 seconds (8192 images / 30 IPS) for the playback to work properly.

Note: During playback, the image size of the recording (FRAME, FIELD or CIF) will be shown on the screen.

4.3.1 Playback Control

	Fast Forward	Increase the speed for fast forward. Click once to get 4X speed forward and click twice to get 8X speed, etc., and the maximum speed is 32X.
	Fast Rewind	Increase the speed for fast rewind. Click once to get 4X speed rewind and click twice to get 8X speed, etc., and the maximum speed is 32X.
/	Play / Pause	Click to play the latest recorded video clip immediately, and click again to pause. In the pause mode, click once to get one frame forward, and click to get one frame rewind.
	Stop	Click to stop the video playback.
	Slow Playback	Click once to get 1/4X speed playback, and click twice to get 1/8X speed playback.
/	Previous / Next Hour	Click to jump to the next / previous time interval in an hour, for example, 11:00 ~ 12:00 or 14:00 ~ 15:00, and start playing the earliest event video clip recorded during this whole hour.
A B	Repeat	Click to set point A and point B in a video clip, and the system will play only the specified range in that clip.
	Backup	Click to open the backup menu for video backup.

4.3.2 Event Search

Click to quickly search the recorded files by event lists: RECORD / MOTION / ALARM / TIME / HUMAN DETECTION / IVS / STATISTIC, or select FULL to show all the event logs.

To quickly search the time you want, select “QUICK SEARCH”. For details, please refer to “5.4.1 QUICK SEARCH” at page 21.

4.3.3 Audio Playback

In the playback mode, click on the quick menu bar as many times as needed to select live or playback audio from audio channel 1~4.

Live audio from audio channel 1~4 (indicated in white).

Playback audio from audio channel 1~4 (indicated in yellow).

Audio channel unselected

Note: To make a video backup with audio, make sure the camera which supports the audio function is connected to the video-in channel and audio-in channel. For example, the audio data from audio CH1 will be recorded with the video data from video CH1.

4.4 User Level Switch

In the key lock mode (), move your USB mouse to display the password input keypad. There are two user levels for accessing the DVR: Administrator () & Operator ().

When the administrator password is entered, will be shown on the status bar of the screen and all operations are allowed. The default administrator password is 0000.

When the operator password is entered, will be shown on the status bar of the screen, and the main menu is **NOT** allowed to access. The operator user level needs to be set in the main menu "SYSTEM" → "TOOLS".

To switch between these two user levels, click the current user level icon to switch to the key lock mode, and move your mouse to show the password input keypad, and enter the password of the user level you want.

4.5 VGA Output Resolution Support

Users are allowed to change the resolution depending on their display monitor.

Note: For AVD744C and AVD744CD, this function appears only when "PRIORITY" is set to "DISPLAY FIRST". For details, please refer to "5.1.1 GENERAL" in the user manual.

Right-click to display the main menu, and select "ADVANCED CONFIG" → "DISPLAY".

ADVANCED CONFIG

CAMERA	DE-INTERLACE *(For AVD748BD & 746BD Only)*	OFF
DETECTION	FULL SCREEN DURATION	03
ALERT	QUAD SCREEN DURATION *(For AVD748BD & 746BD Only)*	03
NETWORK	CALL SCREEN DURATION	03
DISPLAY	DISPLAY COVERT	ON
RECORD	HDD DISPLAY MODE	HDD SIZE
DEVICES	ALPHA BLENDING	200
DCCS	VGA OUTPUT	1600 x 1200
IVS	VGA DEINTERLACE *(For AVD748BD, 746BD, 744BD & 744B Only)*	ON
NOTIFY	COMPOSITE DEINTERLACE *(For AVD748BD, 746BD, 744BD & 744B Only)*	ON
EXIT		

Move to "VGA OUTPUT", and select the VGA resolution you want. There are three options as follows:

- 1024 x 768 (default)
- 1280 x 1024
- 1600 x 1200

Note: To have the best image quality on your LCD monitor, make sure (1) the selected DVR VGA output resolution is supported by your monitor, and (2) the VGA output settings on both the LCD monitor and DVR are consistent.
If the image is not positioned or scaled properly, please go to your monitor's menu for adjustment. For details, please refer to the user manual of your LCD monitor.

5. MAIN MENU

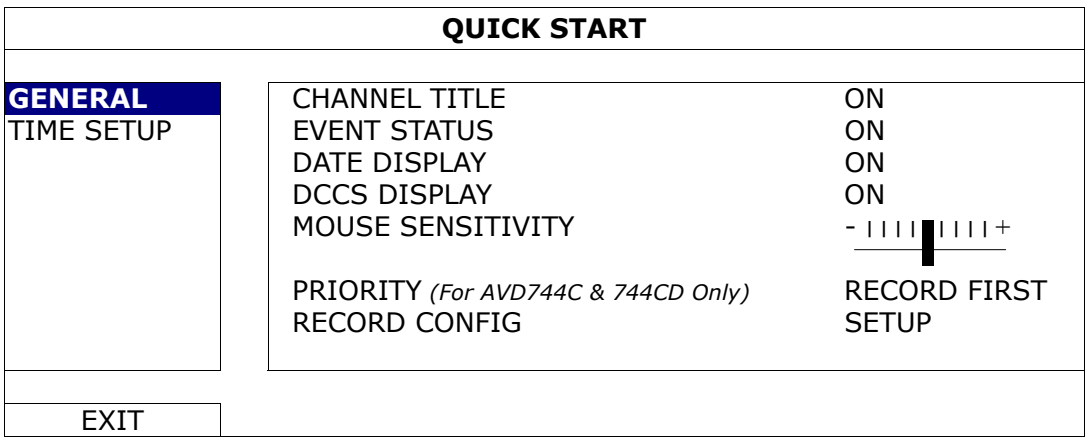
Right-click anywhere on the screen to show the main menu as follows, and right-click again to exit. For details about the menu structure, please refer to “APPENDIX 5 MAIN MENU STRUCTURE” at page 64.

Main Menu

	QUICK START	Click to set the status display, image settings, and date & time.
	DATE SETUP	Click to set the date display and daylight saving.
	SYSTEM	Click to set the system configurations.
	EVENT INFORMATION	Click to enter the event search menu.
	ADVANCED CONFIG	Click to set CAMERA, DETECTION, ALERT, NETWORK, DISPLAY, RECORD, DEVICES, DCCS, IVS & NOTIFY.
	SCHEDULE SETTING	Click to set record timer and detection timer.

5.1 QUICK START

5.1.1 GENERAL



1) CHANNEL TITLE

Select to display the channel title or not (ON / OFF).

2) EVENT STATUS

Select to display the event icons or not (ON / OFF).

Note: For details about each event icon, please refer to “4.1 Live Page” at page 11.

3) DATE DISPLAY

Select to display the date or not (ON / OFF).

4) DCCS DISPLAY

Select to display the DCCS icon or not (ON / OFF).

5) MOUSE SENSITIVITY

Select the mouse sensitivity by 9 levels.

6) PRIORITY *(For AVC793C & 793CD Only)*

This function is used to reallocate the system sources to live display, record, and remote access. There are three options for this function: RECORD FIRST / NETWORK FIRST / DISPLAY FIRST.

RECORD FIRST: When this option is selected, Full D1 at real-time record on all channels is available, but the frame rate for remote monitoring will be decreased, and the VGA output resolution is fixed to 1024 x 768.

NETWORK FIRST: When this option is selected, real-time remote monitoring will be available, but Full D1 real-time recording on all channels will not be available, and the VGA output resolution is fixed to 1024 x 768.

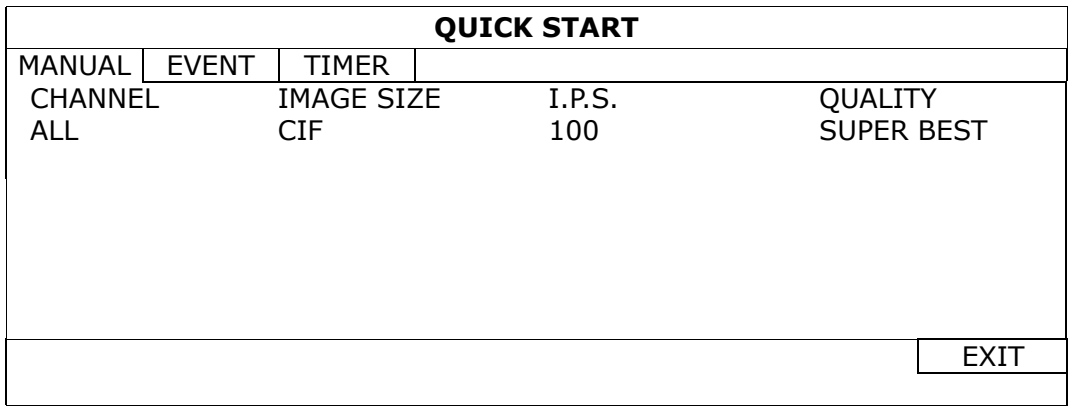
DISPLAY FIRST: When this option is selected, three VGA output resolutions will be available to choose (1024 x 768 / 1280 x 1024 / 1600 x 1200), but Full D1 real-time recording on all channels and real-time remote monitoring will not be available.

7) RECORD CONFIG

Click “SETUP” to enter the setting page individually for manual record, event record and timer record.

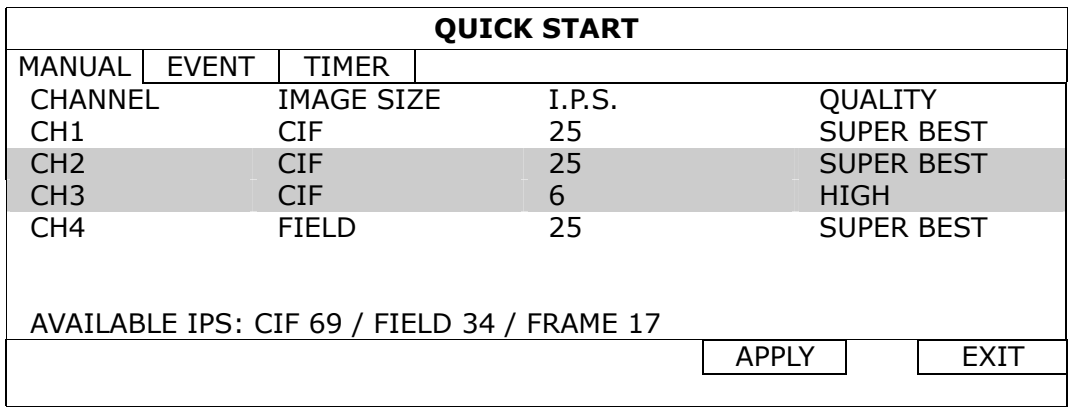
a) Select the record type you want to set.

b) In “CHANNEL”, select “ALL” to apply the changes here to all channels.

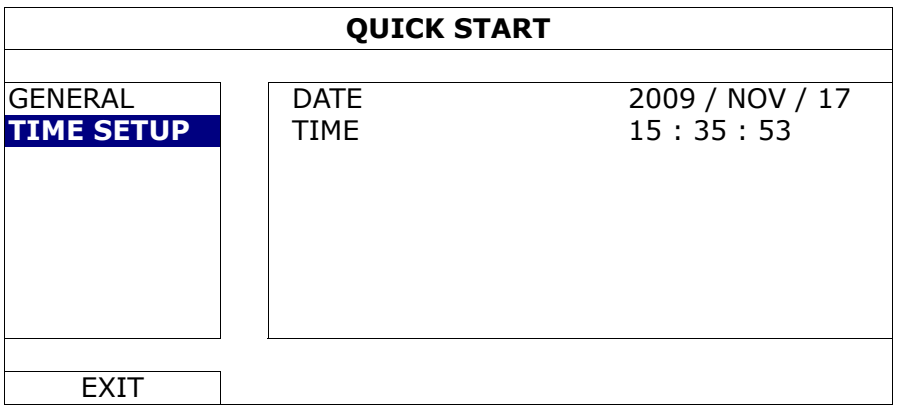


Note: The I.P.S. section is based on PAL system.

Or, select “BY CHANNEL” to set the image size, image per second & image quality individually for each channel.



5.1.2 TIME SETUP



1) DATE

Set the current date. The default display format is YEAR – MONTH – DATE (Y-M-D).

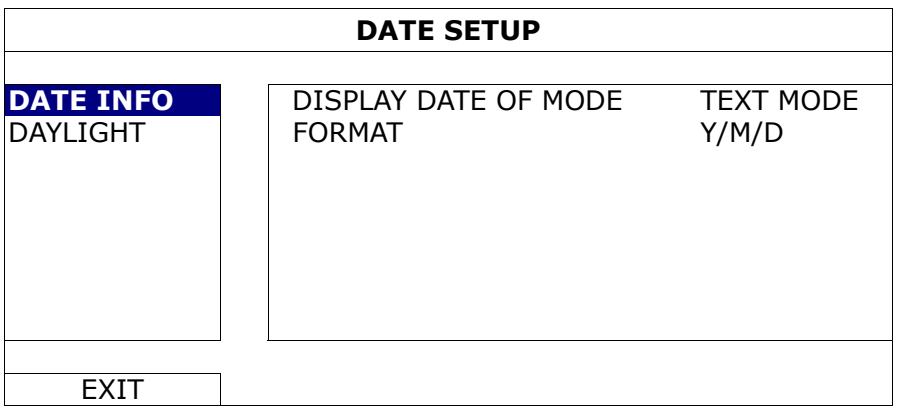
Note: To change the date display format, please refer to "5.2.1 DATE INFO".

2) TIME

Set the current time in HOUR : MIN : SEC.

5.2 DATE SETUP

5.2.1 DATE INFO



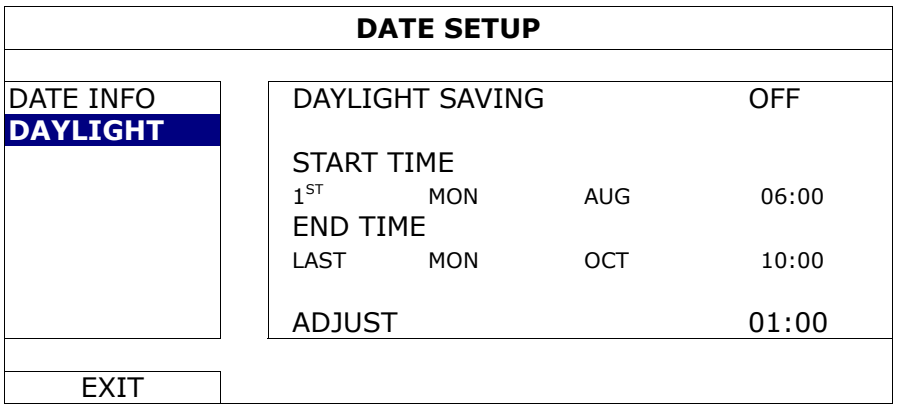
1) DISPLAY DATE OF MODE

Show the date display mode.

2) FORMAT

Select one date format from the following three options: Y/M/D, M/D/Y or D/M/Y.

5.2.2 DAYLIGHT



Depending on the time zone you're in:

1) DAYLIGHT SAVING

Select to enable (ON) or disable (OFF) this function.

2) START TIME / END TIME

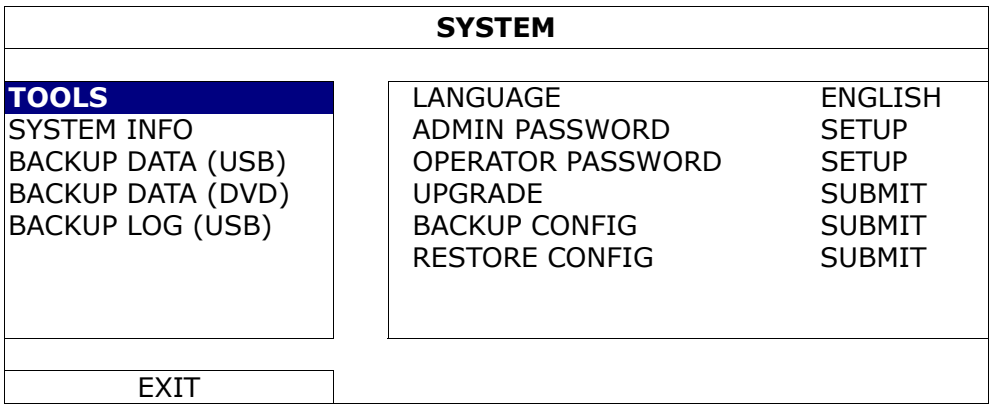
Set the start time and end time.

3) ADJUST

Set the time in HOUR : MIN.

5.3 SYSTEM

5.3.1 TOOLS



1) LANGUAGE

Select the language of the OSD.

2) ADMIN PASSWORD

Click “SETUP” to change the administrator password. The default administrator password is **0000**.

When you’re prompted to enter the DVR password, enter the administrator password, and will be shown on the status bar of the screen and all operations are allowed.

3) OPERATOR PASSWORD

Click “SETUP” to set or change the operator password. .

When you’re prompted to enter the DVR password, enter the operator password, and will be shown on the status bar of the screen and the main menu is **NOT** allowed to access.

4) UPGRADE

Save the upgrade files obtained from your installer or distributor in a compatible USB flash drive, and insert it into the USB port at the front panel. Then, click “SUBMIT” to start upgrading.

Note: Before using the USB flash drive, please use your PC to format the USB flash drive to FAT32 format first. For the list of compatible USB flash drives, please refer to “APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST” at page 62.

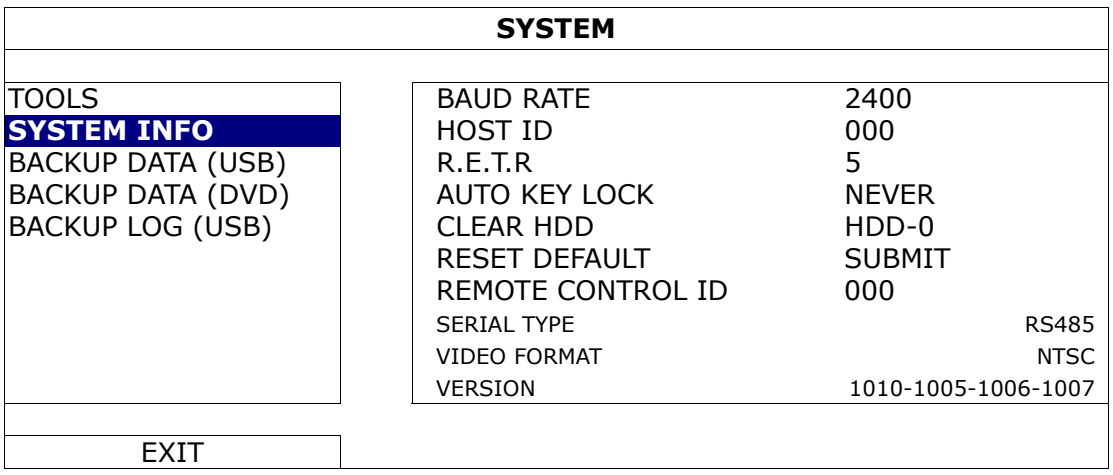
Note: After upgrading firmware, it’s recommended to clear all HDD data for the system to work more stably. Before clearing all HDD data, please remember to make video backup.

5) BACKUP CONFIG / RESTORE CONFIG

To keep the current configurations after DVR upgrade, insert a compatible USB flash drive into the USB port, and select “SUBMIT” in “BACKUP CONFIG” to copy the current DVR configurations to a file “System.bin” and save to your USB flash drive.

To restore the DVR configurations, insert the USB flash drive including “System.bin” to the USB port, and select “SUBMIT” in “RESTORE CONFIG”.

5.3.2 SYSTEM INFO



1) BAUD RATE

Set the baud rate of the DVR (2400 / 9600 / 19200 / 38400 / 57600 / 115200).

2) HOST ID

Set the ID of the DVR (000 ~ 254).

3) R.E.T.R

Select the timeout in minute after which the R.E.T.R. function will be activated (3 / 5 / 10 / 30).

4) AUTO KEY LOCK

Set the time-out in second after which the key lock function is activated (NEVER / 30 / 60 / 120).

5) CLEAR HDD

Select the HDD you want to clear, and click “YES” to confirm or “NO” to cancel.

It’s recommended to clear all data in the hard disk when:

- It’s the first time to use this DVR to ensure the recorded data are not mixed with other data previously saved in the same hard disk.
- The DVR firmware is upgraded for the system to work more stably. Before clearing all HDD data, please remember to make video backup.
- DVR date and time are changed accidentally when the recording function is activated. Otherwise, the recorded data will be disordered and you will not be able to find the recorded file to backup by time search.

6) RESET DEFAULT

Click “SUBMIT” to reset all settings as default, and select “YES” to confirm or “NO” to cancel. The DVR will reboot after reset.

7) REMOTE CONTROL ID

This function is available when users need to control two or more DVRs with one IR remote controller. The ID set here is used to identify the DVR the remote controller is going to control. Please also read the user manual of the IR remote controller for details.

8) SERIAL TYPE

Here shows the serial type of the DVR (RS-485).

9) VIDEO FORMAT

Here shows the information of the DVR video format (NTSC / PAL).

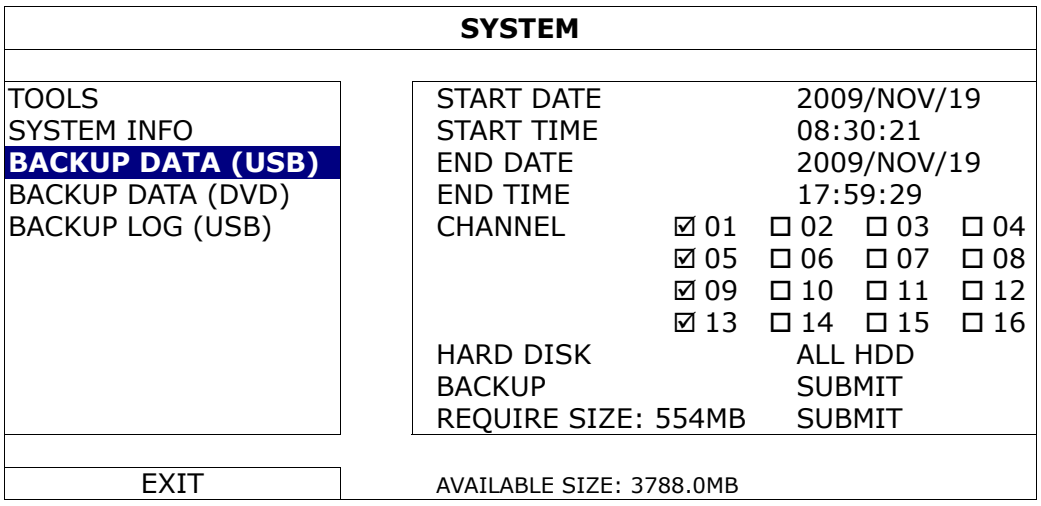
10) VERSION

Here shows the firmware version information.

5.3.3 BACKUP DATA (USB) / (DVD)

Insert a compatible USB flash drive to the USB port at the front panel, or press ⏏ to eject the DVD writer and place a DVD-R or CD-R to it.

Note: Before using the USB flash drive, please use your PC to format the USB flash drive to FAT32 format first. For the list of compatible USB flash drives, please refer to "APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST" at page 62.



1) START DATE / START TIME

   Select the start date & time.

2) END DATE / TIME

   Select the end date & time.

3) CHANNEL

   Click to select the channel(s).

4) HARD DISK

   Select the hard disk containing the video data you need or "ALL HDD".

5) BACKUP

   Click "SUBMIT" to start backup.

6) REQUIRE SIZE

   To know the size of the expected backup video before backup, click "SUBMIT" to start calculating.

- Backup File Playback

  During the backup process, a file player installer "PLAYER.EXE" will also be copied into your USB flash drive or disk, and you will see the message "CHECK PLAYER" shown on the screen.

Note: The maximum number of CD-R or DVD-R backup files in the CD or DVD is 41.

Insert your USB flash drive or place the CD or DVD into the DVD-ROM drive of your PC. Install the file player "PLAYER.EXE", and double click a backup file to play it directly in your PC and see if the backup is successful.

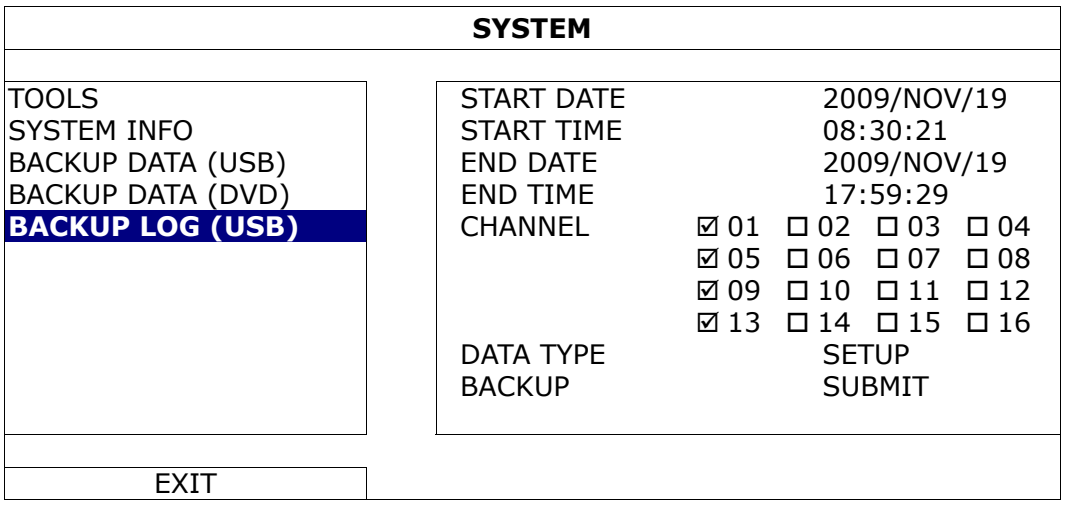
Note: The supported PC operating systems are Windows 7, Vista & XP.

5.3.4 BACKUP LOG (USB)

This function is used to backup the event log.

Insert a compatible USB flash drive to the USB port at the front panel.

Note: Before using the USB flash drive, please use your PC to format the USB flash drive to FAT32 format first. For the list of compatible USB flash drives, please refer to "APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST" at page 62.



1) START DATE / START TIME

   Select the start date & time.

2) END DATE / TIME

   Select the end date & time.

3) CHANNEL

   Click to select the channel(s).

4) DATA TYPE

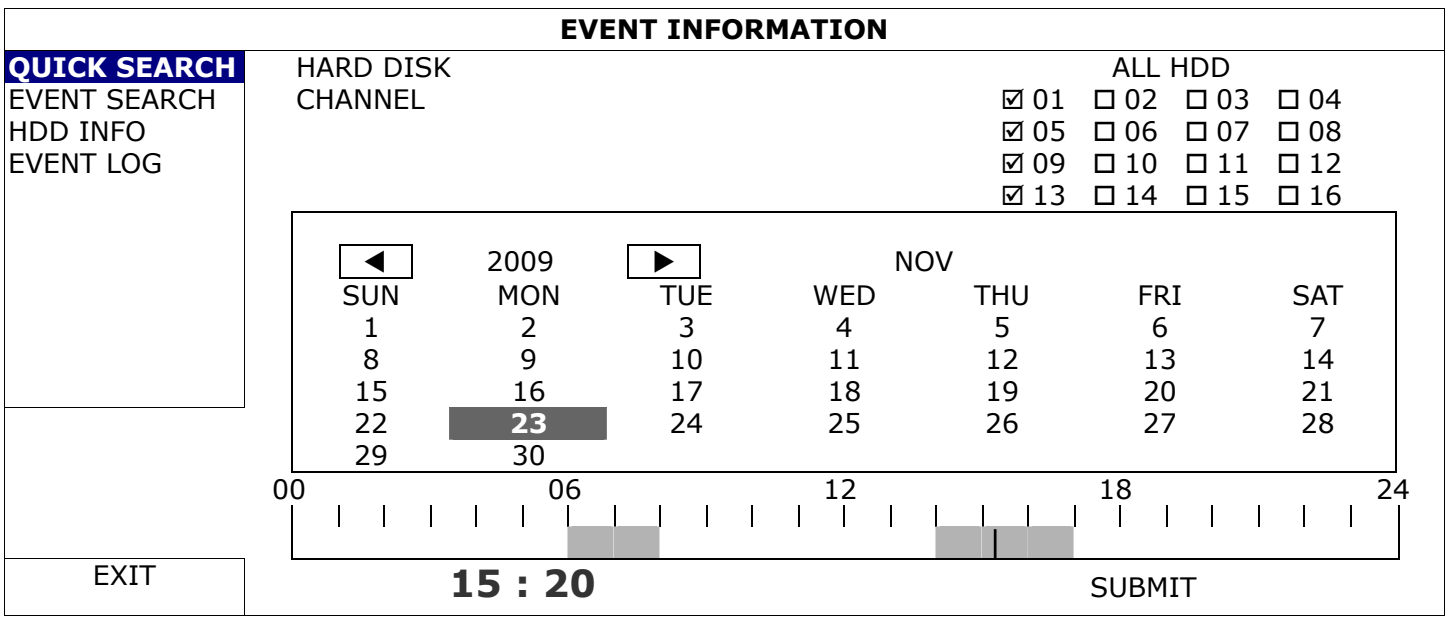
   Click "SETUP" to select the event type you want: MANUAL / MOTION / ALARM / SYSTEM / TIMER / HUMAN DETECTION / INFLOW / OUTFLOW / VIRTUAL ENCE / ONEWAY / SENCE CHANGE, or select "SELECT ALL" to choose all event types.

5) BACKUP

   Click "SUBMIT" to start backup. You'll see a log file (.csv) in the flash drive.

5.4 EVENT INFORMATION

5.4.1 QUICK SEARCH


EVENT INFORMATION
QUICK SEARCH
EVENT SEARCH
HDD INFO
EVENT LOG
HARD DISK
ALL HDD
CHANNEL
☑ 01 ☐ 02 ☐ 03 ☐ 04
☑ 05 ☐ 06 ☐ 07 ☐ 08
☑ 09 ☐ 10 ☐ 11 ☐ 12
☑ 13 ☐ 14 ☐ 15 ☐ 16
2009
NOV
SUN MON TUE WED THU FRI SAT
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30
00 06 12 18 24
EXIT
15 : 20
SUBMIT

Step1: Select the hard disk and channel including the video data you want to search.

Step2: Select the month including the video data you want to search from the calendar, and the date with recorded data will be highlighted.

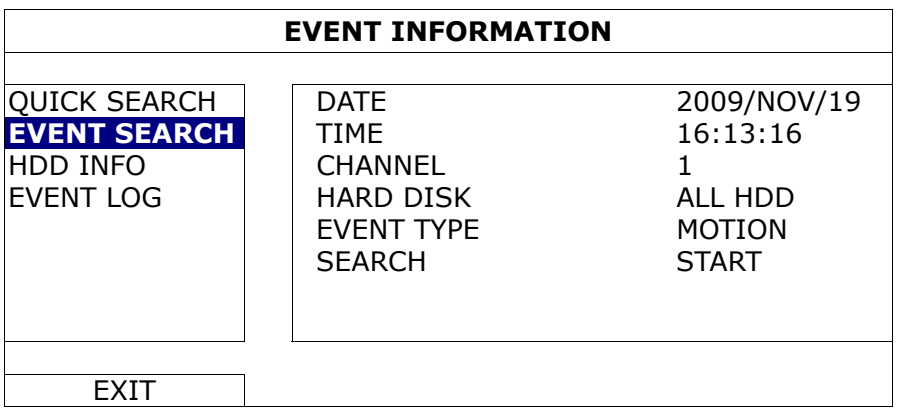
Step3: Select the date you want from the calendar, and the time with recorded data will be highlighted from the time scale bar.

Step4: To immediately play the video clip, click “SUBMIT”.

To choose the start time for video playback, move your mouse cursor to the highlighted time, and click to confirm the time when the time display below is the time you want. The video playback is activated right away when you confirm the time.

Note: For video playback operations, please refer to “4.3 Playback” at page 11.

5.4.2 EVENT SEARCH



1) DATE / TIME

Select the specific time period that you want to search.

2) CHANNEL

Select the video channel you want to search.

3) HARD DISK

Select the hard disk including the video data you want to search, or select “ALL HDD”.

4) EVENT TYPE

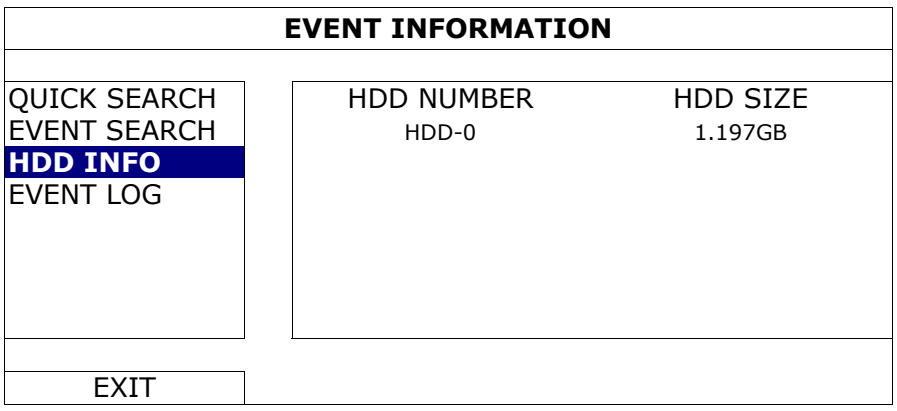
Select the event type you want to search: MOTION / ALARM / HUMAN DETECTION / INFLOW / OUTFLOW / VIRTUAL FENCE / ONE WAY / SCENE CHANGE.

5) SEARCH

Click “START” to start search and play the video data immediately.

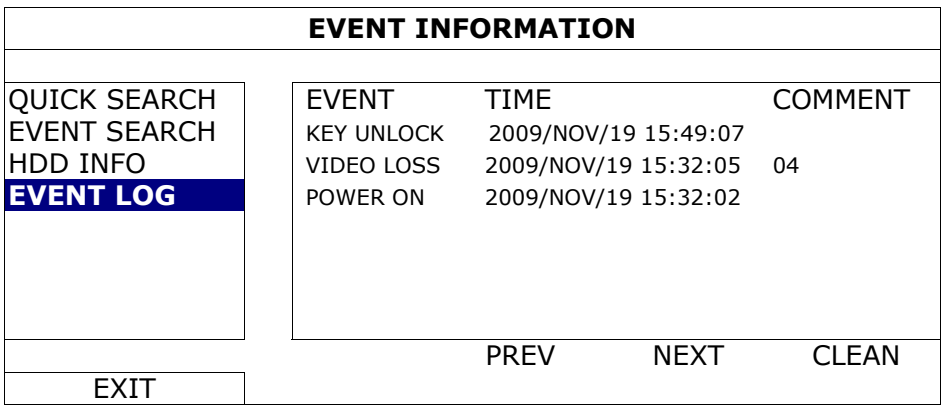
5.4.3 HDD INFO

You can check the remaining capacity of the connected HDD in this device.



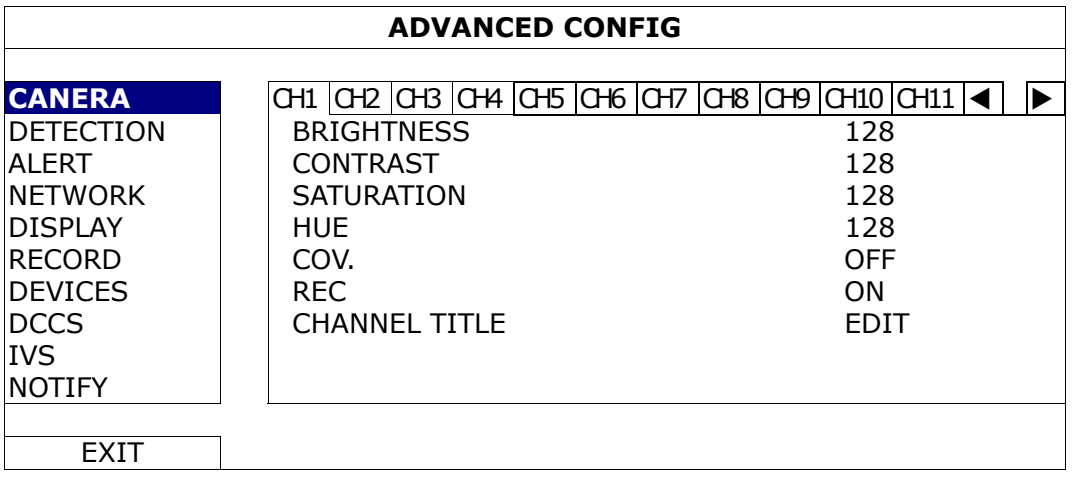
5.4.4 EVENT LOG

You can check all the event information (event type, time and channel), or clear all log records.



5.5 ADVANCED CONFIG

5.5.1 CAMERA



1) BRIGHTNESS / CONTRAST / SATURATION / HUE

Click the current value to manually adjust the brightness/contrast/saturation/hue of each channel here.

2) COV.

Select if you want to mask the selected channel under recording (ON / OFF). When this function is activated, the wording “COV.” will be shown on the channel screen.

Note: To hide the wording “COV.” When this function is on, go to “DISPLAY”, and set “DISPLAY COVERT” to “OFF”. For details, please refer to “5.5.6 DISPLAY” at page 28.

3) REC

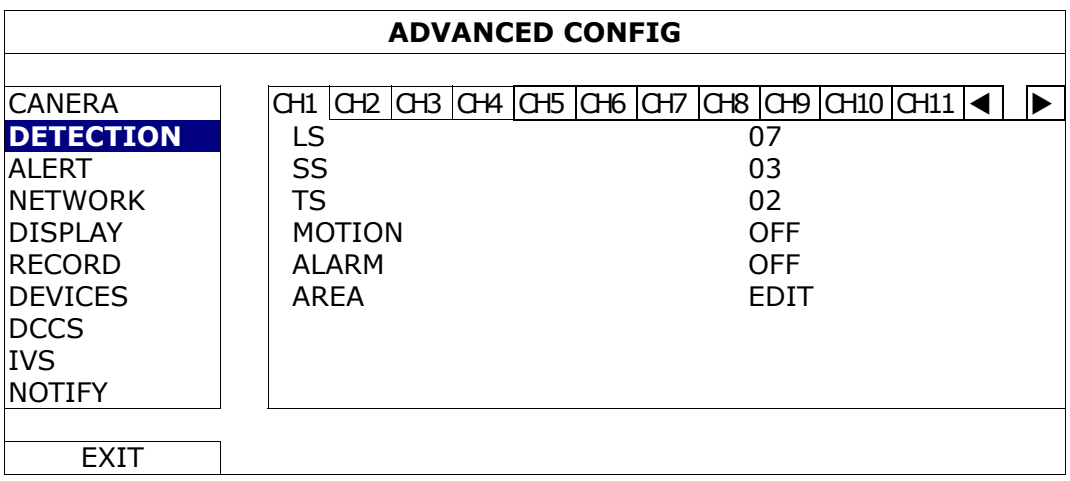
Select if you want to enable recording for the selected channel (ON / OFF).

Note: When this function is disabled, no manual, event or timer recording will be activated even if any of these three record functions is set to "ON".

4) CHANNEL TITLE

Click "EDIT" to input the channel title (up to six characters). The default title is the channel number.

5.5.2 DETECTION



1) LS (Level of Sensitivity)

"LS" is to set the sensitivity of comparing two different images. The smaller the value is, the higher sensitivity for motion detection. The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default value is 07.

2) SS (Spatial Sensitivity)

"SS" is to set the sensitivity for detecting the size of one object (the number of the grids) on the screen. The smaller the value is, the higher sensitivity for motion detection.
The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default setting is 03.

Note: The default setting of SS is 03, which means once an object is detected more than 3 grids, the system will get triggered. So the value of SS must be less than the number of grids that you set up for the motion detection area.

3) TS (Time of Sensitivity)

"TS" is to set the sensitivity regarding how long one object stays in the detection area and triggers the recording. The smaller the value is, the higher sensitivity for motion detection.
The highest sensitivity setting is 00, and the lowest sensitivity setting is 15. The default setting is 02.

4) MOTION

Select if you want to activate the motion detection function for the selected channel (ON/OFF).

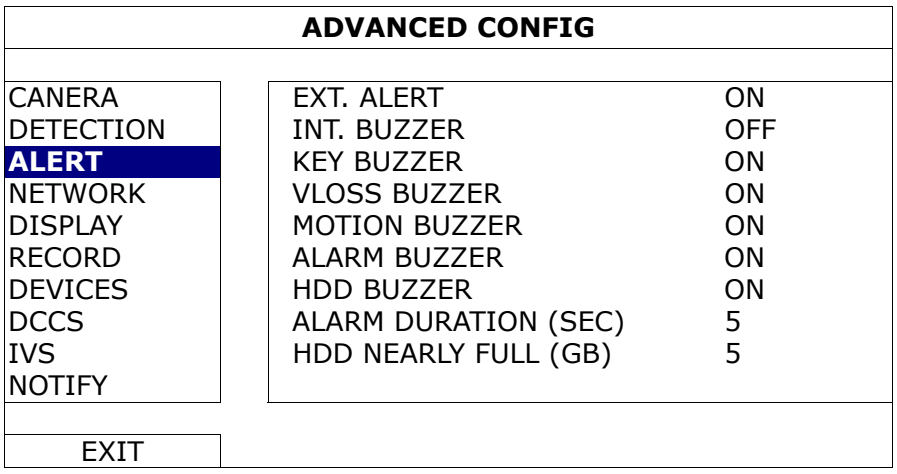
5) ALARM

Select N.C./ N.O depending on your installation need. The default alarm value is OFF.

6) AREA

Click "EDIT" to set the motion detection area.
There are 16 × 12 grids per camera for all channels. Pink blocks represent the area that is not being detected while the transparent blocks are the area under detection.

5.5.3 ALERT



1) EXT. ALERT

Select to enable or disable the sound when any external alarm is triggered (ON / OFF).

2) INT. BUZZER

Select to enable or disable the sound (ON / OFF) for all internal buzzers: KEY BUZZER, VLOSS BUZZER, MOTION BUZZER, ALARM BUZZER, and HDD BUZZER.

Note: When this item is set to "OFF", item 3) to item 7) will be disabled even though they are set to ON.

3) KEY BUZZER

Select to enable or disable the sound when pressing the buttons on the front panel (ON / OFF).

4) VLOSS BUZZERD

Select to enable or disable the sound when video loss happened (ON / OFF).

5) MOTION BUZZER

Select to enable or disable the sound when any motion alarm is triggered (ON / OFF).

6) ALARM BUZZER

Select to enable or disable the sound when any internal alarm is triggered (ON / OFF).

7) HDD BUZZER

Select to enable or disable the sound (ON / OFF) when the HDD remaining capacity reaches to the value set in "HDD NEARLY FULL (GB)".

8) ALARM DURATION (SEC)

Select the duration time for alarm buzzer in second (5 / 10 / 20 / 40).

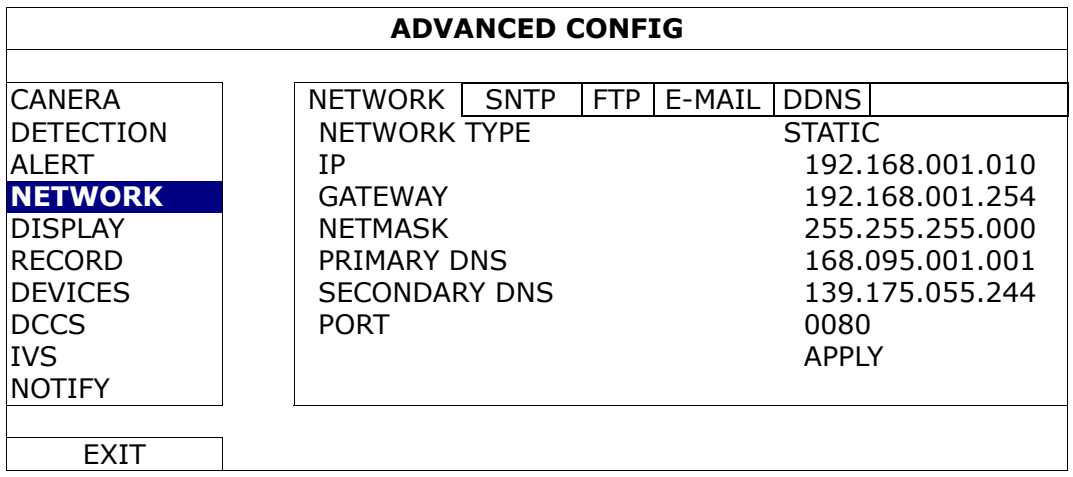
9) HDD NEARLY FULL (GB)

If HDD BUZZER is enabled, select the duration time for buzzer notifications when the hard disk available capacity is 5/10/15/20 GB left.

5.5.4 NETWORK

NETWORK

- **STATIC**



1) NETWORK TYPE

Select the network type as STATIC and set all the information needed in the DVR.

2) NETWORK INFORMATION (IP / GATEWAY / NETMASK)

Key in all the network information obtained from your ISP (Internet Service Provider).

3) DNS (PRIMARY DNS / SECONDARY DNS)

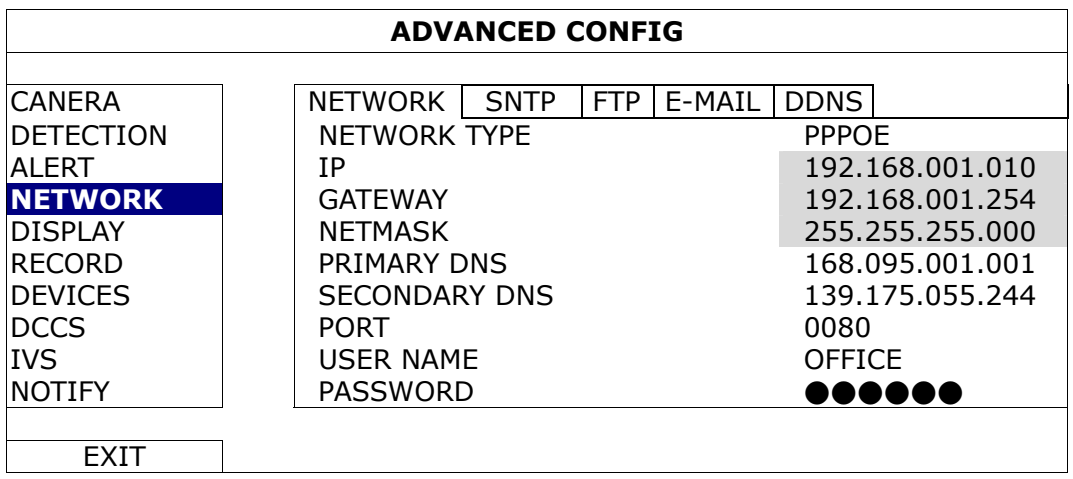
Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

4) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

- **PPPOE**

Note: When PPPOE configuration is completed, please move to "DDNS" to configure the DDNS service.



1) NETWORK TYPE

Select the network type as PPPOE and set all the information needed in the DVR.

2) DNS (PRIMARY DNS / SECONDARY DNS)

Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

3) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by

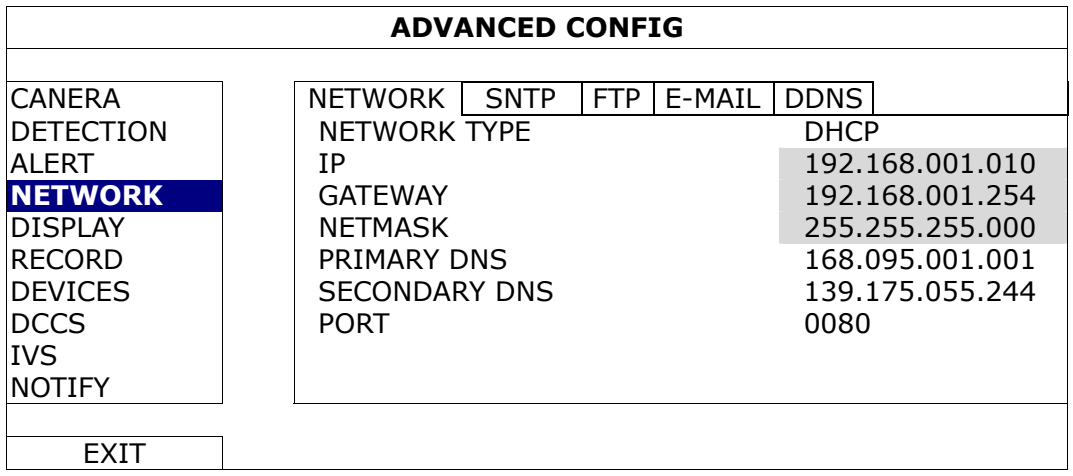
HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

4) USER NAME / PASSWORD

Set “username” and “password” subscribed from your ISP supplier

➢ DHCP

Note: When DHCP configuration is completed, please move to “DDNS” to configure the DDNS service.



1) NETWORK TYPE

Select the network type as DHCP.

2) DNS (PRIMARY DNS / SECONDARY DNS)

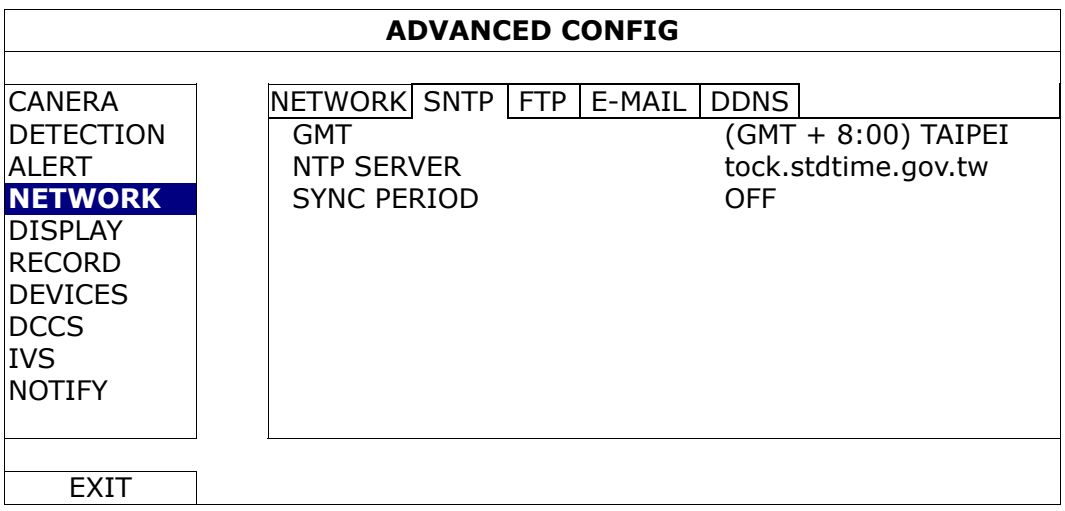
Key in the IP address of the domain name server obtained from your ISP (Internet Service Provider).

3) PORT

The valid number ranges from 1 to 9999. The default value is 80. Typically, the TCP port used by HTTP is 80. However in some cases, it is better to change this port number for added flexibility or security.

SNTP

Before using this function, please connect your DVR to Internet.



1) GMT

Select your time zone. There are 75 time zones for you to choose.

2) NTP SERVER

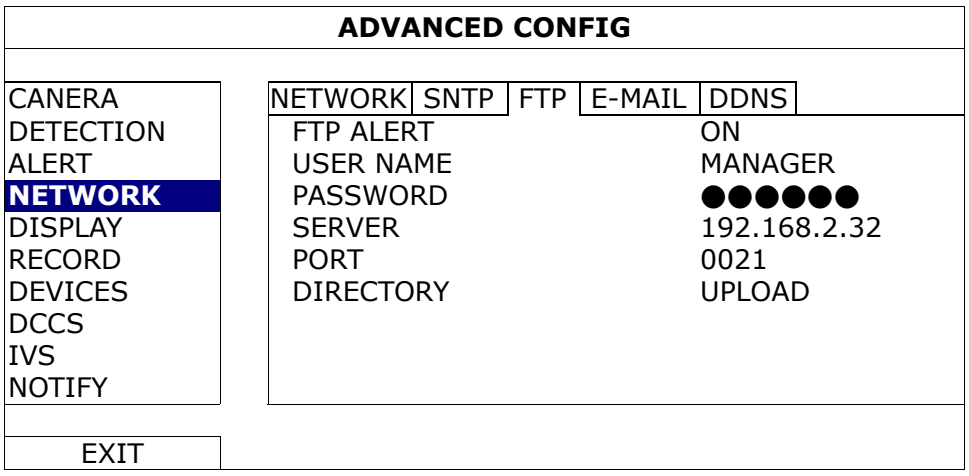
Click to change the default NTP server to another server they’re familiar with, or keep the default NTP server.

3) SYNC PERIOD

Select to synchronize the DVR time everyday (DAILY), or turn this function off (OFF).

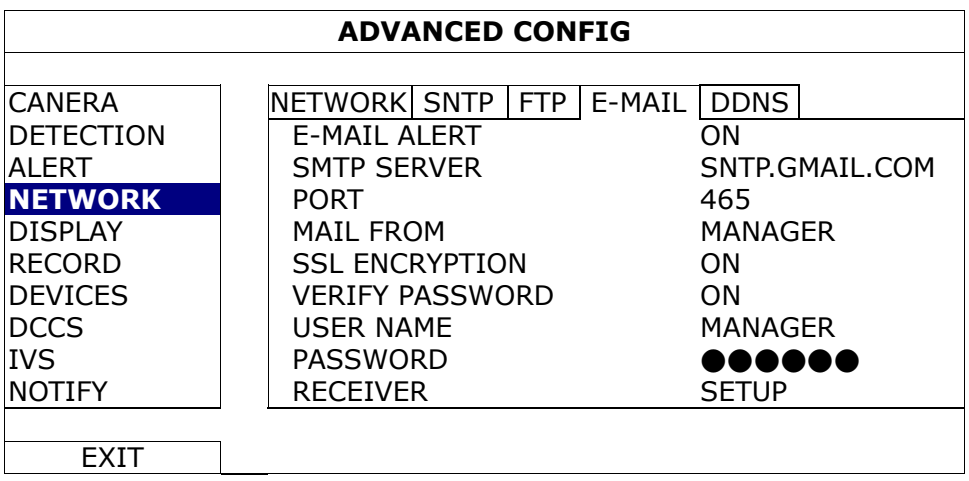
FTP

When this function is enabled and an event occurs, a html file including a link will be sent to the specified FTP site. Click the link to access to this DVR and check the event recording.



E-MAIL

When this function is enabled and an event occurs, a html file including a link will be sent to the specified E-mail address. Click the link to access to this DVR and check the event recording.



1) E-MAIL ALERT

   Select “ON” to enable this function, or “OFF” to disable this function.

2) SMTP SERVER

   Enter the SMTP server address provided from your e-mail system supplier.

3) PORT

   Enter the port number provided from your e-mail system supplier. If this column is left blank, the e-mail server will use port 25 to send e-mails.

4) MAIL FROM

   Enter the sender’s name.

5) SSL ENCRYPTION

   Select “ON” if your e-mail server is using SSL encryption to protect your e-mail content from unauthorized access.

6) VERIFY PASSWORD

   Some mail servers are required to verify the password. Please enter the “user name” and “password”.

7) USER NAME / PASSWORD

   Enter the “user name” and “password” when “VERIFY PASSWORD” is set to “ON”.

8) RECEIVER

   Select “SETUP” to add up to 15 e-mail addresses of the assigned recipients.

DDNS

You need to additionally set DDNS when your network type is PPPOE or DHCP.

We have our own DDNS server for quick DDNS service configuration. You don't need to additionally apply a DDNS service.

- To use our own DDNS server, select "default" in "SYSTEM NAME".
- The default host name is the MAC address of the DVR.
  Then, note down the whole address under "CURRENT HOST ADDRESS", such as *MAC000E5318B3F0@ddns.dvrtw.com.tw*. This is the default IP address used to access your DVR remotely.

Note: Please at least use the default address to access your DVR remotely once. This is to ensure our DDNS server has your DVR registered. Then, you may change the host name to a more meaningful name to memorize later here.

- (Optional) Enter your email address to receive our DDNS server notification if any.

Note: If you want to additionally apply a DDNS service instead of using ours, please refer to http://www.surveillance-download.com/user/CMS.pdf and check "Appendix 2" for details.

ADVANCED CONFIG

	NETWORK | SNTP | FTP | E-MAIL | DDNS	
CANERA	DDNS	ON
DETECTION	SYSTEM NAME	default
ALERT	HOST NAME	MAC000E5318B3F0
NETWORK	EMAIL	EMPTY
DISPLAY		
RECORD		
DEVICES		
DCCS		
IVS		
NOTIFY		
EXIT	CURRENT HOST ADDRESS	MAC000E5318B3F0@ddns.dvrtw.com.tw

5.5.6 DISPLAY

ADVANCED CONFIG

CAMERA	DE-INTERLACE *(For AVD748BD & 746BD Only)*	OFF
DETECTION	FULL SCREEN DURATION	03
ALERT	QUAD SCREEN DURATION *(For AVD748BD & 746BD Only)*	03
NETWORK	DWELL SCREEN DURATION	03
DISPLAY	DISPLAY COVERT	ON
RECORD	HDD DISPLAY MODE	HDD SIZE
DEVICES	VIDEO OUTPUT *(For AVD744C & AVD744CD Only)*	BOTH
DCCS	ALPHA BLENDING	200
IVS	VGA OUTPUT	1024 X 768
NOTIFY	VGA DEINTERLACE *(For AVD748BD, 746BD, 744BD & 744B Only)*	ON
	COMPOSITE DEINTERLACE *(For AVD748BD, 746BD, 744BD & 744B Only)*	ON
EXIT		

1) DE-INTERLACE *(For AVD748BD & 746BD Only)*

Select to enable or disable the de-interlace function (ON / OFF).

Note: If you set the recording image size as "FRAME", please TURN ON de-interlace function.
If you set the recording image size as "CIF", please TURN OFF the de-interlace function.

2) FULL SCREEN DURATION

Select the full screen dwell duration time in second (03 / 05 / 10 / 15).

3) QUAD SCREEN DURATION *(For AVD748BD & 746BD Only)*

Select the quad screen dwell duration time in second (03 / 05 / 10 / 15).

4) DWELL SCREEN DURATION

Select the duration time in second for the CALL monitor function (03 / 05 / 10 / 15).

5) DISPLAY COVERT

Select “ON” or “OFF” to display or hide the wording “COV.” When covert recording is activated in “CAMERA”.

6) HDD DISPLAY MODE

Select “SIZE” to show the remaining HDD capacity for recording in GB, or “TIME” to show the remaining recording time.

7) VIDEO OUTPUT *(For AVC793C & AVC793CD Only)*

Select “BOTH” if you want to output images on both LCD and CRT monitors; select “VGA” if you want to output images on a LCD monitor; select “COMPOSITE” if you want to output images on a CRT monitor.

8) ALPHA BLENDING

Click to manually adjust the transparent level of the main menu.

9) VGA OUTPUT

Select the VGA resolution you want. There are three options as follows:

- 1024 x 768 (default)
- 1280 x 1024
- 1600 x 1200

Note: To have the best image quality on your LCD monitor, make sure (1) the selected DVR VGA output resolution is supported by your monitor, and (2) the VGA output settings on both the LCD monitor and DVR are consistent.
If the image is not positioned or scaled properly, please go to your monitor’s menu for adjustment. For details, please refer to the user manual of your LCD monitor.

---

10) VGA DEINTERLACE

Select to enable or disable the de-interlace function when you have VGA output (ON / OFF).

11) COMPOSITE DEINTERLACE

Select to enable or disable the de-interlace function when you have composite output (ON / OFF).

5.5.7 RECORD

Note: Please DO NOT change the date or time of your DVR after the recording function is activated. Otherwise, the recorded data will be disordered and you will not be able to find the recorded file to backup by time search. If users change the date or time accidentally when the recording function is activated, it’s recommended to clear all HDD data, and start recording again.

ADVANCED CONFIG

CAMERA	MANUAL RECORD	ON
DETECTION	EVENT RECORD	ON
ALERT	TIMER RECORD	ON
NETWORK	PRE-ALARM RECORD	ON
DISPLAY	OVERWRITE	ON
RECORD	EVENT RECORD ALL CH	OFF
DEVICES	KEEP DATA LIMIT (DAYS)	OFF
DCCS	RECORD CONFIG	SETUP
IVS		
NOTIFY		
EXIT		

1) MANUAL RECORD

Set the manual recording function on / off.

2) EVENT RECORD

Set the event recording function on / off.

3) TIMER RECORD

Set the timer recording function on / off.

4) PRE-ALARM RECORD

Select to enable or disable the pre-alarm function (ON / OFF).
When pre-alarm and event recording functions are both activated, the DVR will record 8MB data before an alarm / motion event is triggered.

5) OVERWRITE

Select “ON” to overwrite previous recorded data in your HDD when the HDD is full. When this function is on and the HDD is full, the DVR will clear 8GB data from the oldest for continuous recording without notice.

6) EVENT RECORD ALL CH

Select to record all channels (ON) or record the channel with an event only (OFF) for any event.

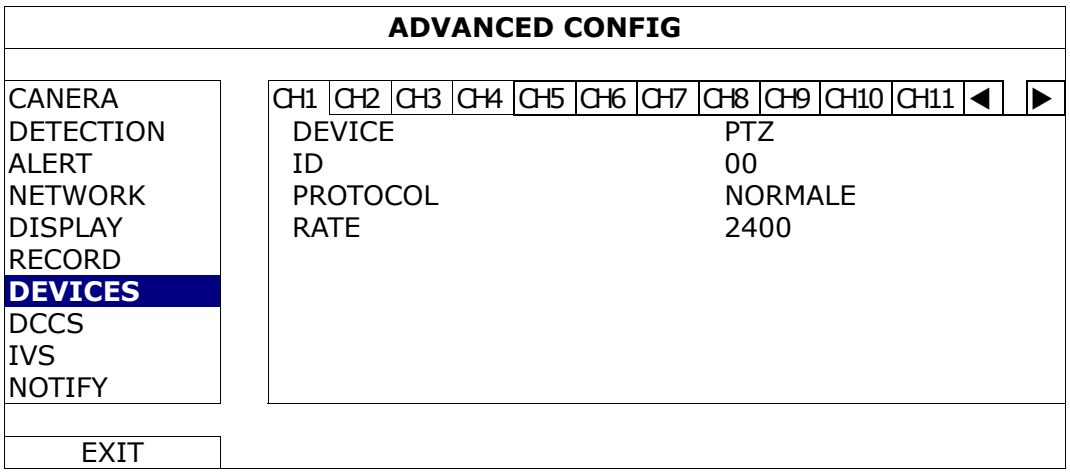
7) KEEP DATA LIMITS (DAYS)

Assign the maximum recording days from 01 to 31 after which all the recorded data will be removed, or select “OFF” to disable this function.

8) RECORD CONFIG

Click “SETUP” to enter the setting page individually for manual record, event record and timer record.
For details, please refer to “5.1.1 GENERAL” at page 14.

5.5.8 DEVICES



1) DEVICE

For the PTZ camera, select “PTZ”.

For a zoom lens control camera:

The DVR will detect it automatically and display its model number here.

To configure the parameters for a zoom lens control camera, please refer to “5.5.9 DCCS” at page 31. Different zoom lens control cameras might have different parameter settings. For details, please refer to their own user manuals.

2) ID

Click the current value to set the ID number (0 ~ 255) for the connected PTZ camera if necessary.
Make sure the ID setting of the camera is the same as the setting here, or the DVR will not be able to control the device.

Note: To know the default ID of the PTZ camera, please refer to its user manual.

3) PROTOCOL

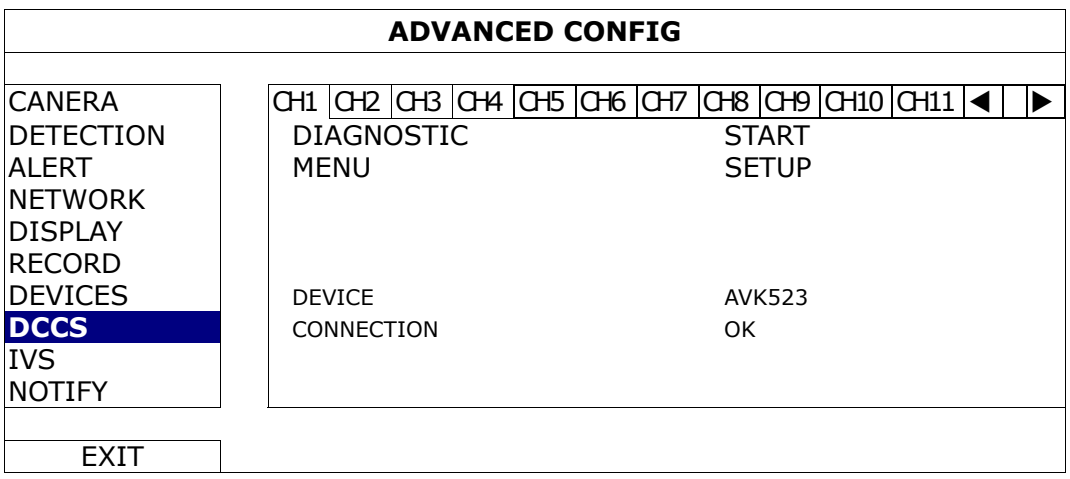
Select NORMALE (our protocol), P-D (PELCO-D) or P-P (PELCO-P) protocol.

4) RATE

Select the baud rate for the connected PTZ camera (2400 / 4800 / 9600 / 19200 / 57600 / 115200).
Make sure the baud rate setting of the camera is the same as the setting here, or the DVR will not be able to control the device.

Note: To know the default baud rate of the PTZ camera, please refer to its user manual.

5.5.9 DCCS



1) DIAGNOSTIC

Click “START” to start examining the DCCS signal transmission between the DVR and the camera. The result will display in “CONNECTION”.

2) MENU

Click “SETUP” to configure the connected zoom lens control camera.
Different zoom lens control cameras might have different parameter settings. For details, please refer to their own user manuals.

Note: While configuring the camera parameters, the DVR will switch to the corresponding channel, and you can simultaneously preview the effects for the settings.

3) DEVICE

Here shows the model number of the camera.

4) CONNECTION

Here shows the examining result for DCCS signal transmission between the DVR and camera. The message is as follows:

MESSAGE SHOWN	MEANING
CHECKING	The DVR is checking the DCCS signal transmission between the DVR and camera.
OK	The signal transmission is fine and the DCCS function works properly.
FAIL	The signal transmission is too weak or not available for the DCCS function to work properly.

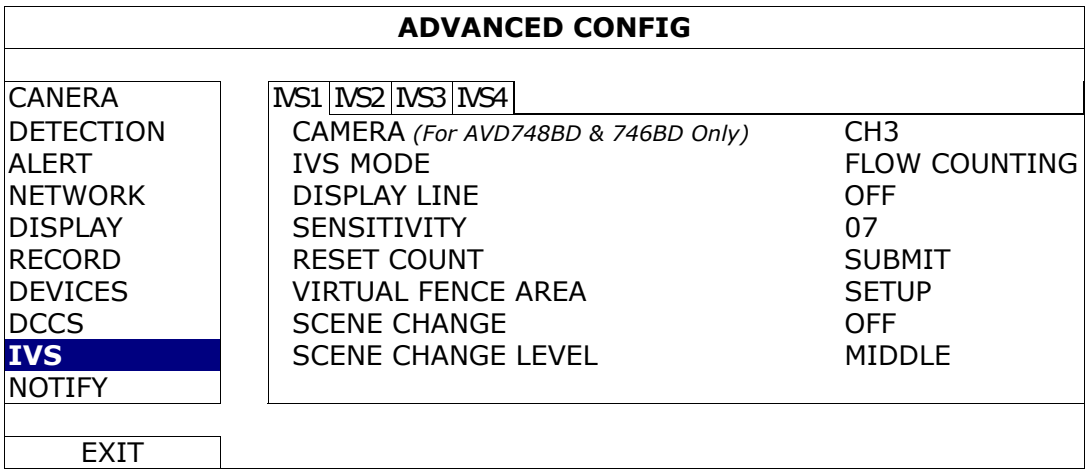
5.5.10 IVS

Note: Before using the IVS function, make sure the event record function is enabled on your DVR.

IVS, Intelligent Video Surveillance, is the advanced application for motion detection, but more precise and smarter. It can be applied to different situations with one of the following three modes: FLOW COUNTING, VIRTUAL FENCE, and ONE WAY.

When anyone crosses the detection line (virtual fence), the recording will be on.

Note: Four camera channels are supported for this function. For AVC748BD and 746BD, users are allowed to select four camera channels randomly to use this function; for AVC744BD, 744B, 744CD & 744C, all the four camera channels are supported.



1) CAMERA *(For AVD748BD & 746BD Only)*

Select the camera channel that you want to use the IVS function.

2) IVS MODE

Select one of the following three modes depending on your environment:

MODE	DESCRIPTION
FLOW COUNTING	A virtual detection line is set to detect the moving direction of pedestrians for flow counting.
VIRTUAL FENCE	A virtual detection line is set to detect intruders crossing the detection line, and an alarm will be triggered.
ONE WAY	A virtual detection line is set to detect intruders from the specified direction, and an alarm will be triggered.

3) DISPLAY LINE

Select to display the detection line for IVS on the screen or not.

4) SENSITIVITY

Set the sensitivity for IVS from 00 ~ 15. The larger the value, the more sensitive the IVS will be.

5) RESET COUNT

Click “SUBMIT” to reset the flow counting number to 0 when the IVS mode is set to “FLOW COUNTING” and activated.

6) VIRTUAL FENCE AREA

Click “SETUP” to draw the detection line for IVS, and set the detection direction from left to right, or right to left. This area setting is the detection base for IVS MODE.

Note: There are some tips to draw the detection line. For details, please check www.surveillance-download.com/user/IVS_setup.pdf.

7) SCENE CHANGE

Select “ON” to trigger a motion event when the camera is sensed to be moved and the camera scene is changed. At the same time, the icon “ ” will be also shown on the screen in addition to the motion icon “ ”

8) SCENE CHANGE LEVEL

Set the detection sensitivity for “SCENE CHANGE” to “HIGH”, “MIDDLE” or “LOW”.

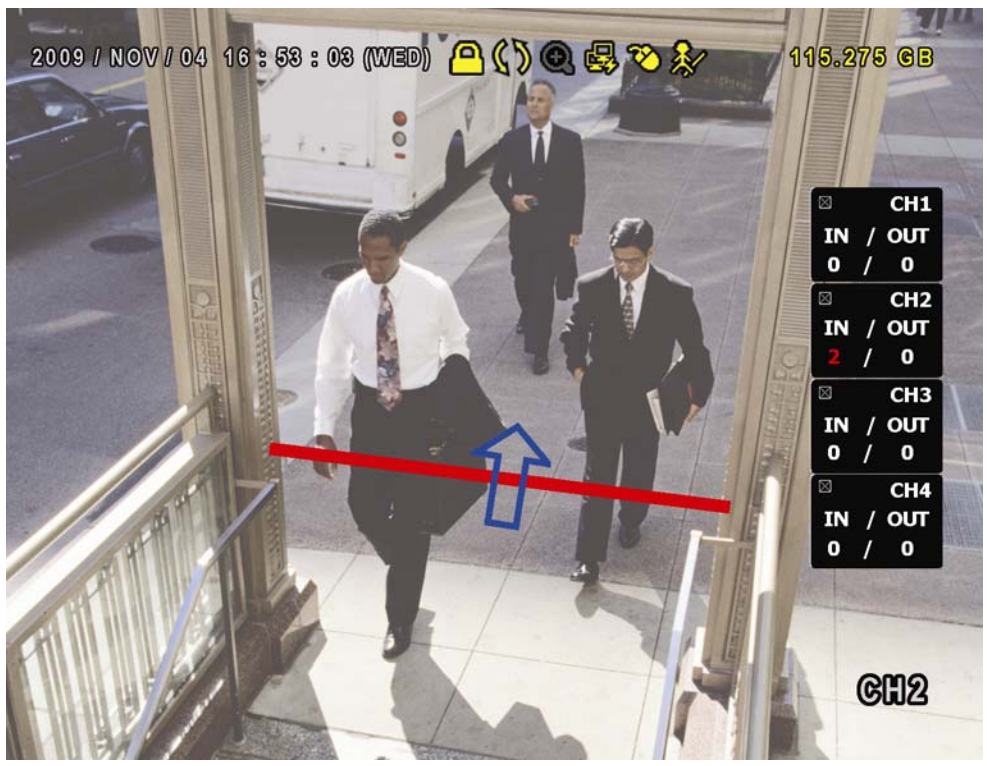
IVS APPLICATION

➢ FLOW COUNTING

Step1: Go to “VIRTUAL FENCE AREA” to draw a detection line with your mouse, and decide the detection direction by selecting “REVERSE”.

Step2: Finish the IVS setting and return to the live view. The IVS icon “” will be shown on the status bar. Click it to show the flow counting panel as follows.
When anyone walks across the detection line, the system will determine his movement is in or out, and add one count to the corresponding channel on the flow counting panel.

IN	People coming from the opposite direction to the arrow mark.
OUT	People coming from the same direction as the arrow mark.



➢ VIRTUAL FENCE and ONE WAY

Step1: Go to “VIRTUAL FENCE AREA” to draw a detection line with your mouse, and decide the detection direction by selecting “REVERSE”.

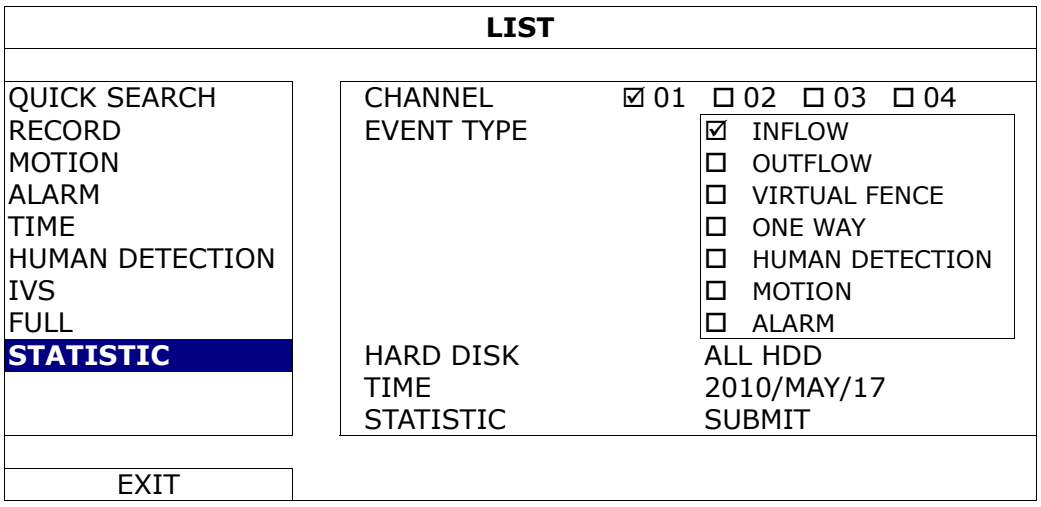
Step2: Finish the IVS setting and return to the live view.

When anyone walks across the detection line, the system will determine his movement is in or out, and:

VIRTUAL FENCE	An event happens for anyone walking across the detection line, and “” will be shown on the screen.
ONE WAY	An event happens for anyone walking from the opposite direction to the arrow mark, and “” will be shown on the screen.

IVS STATISTICS

Press “LIST” on the DVR front panel, or click “ ” → “ ” to enter the event search menu. Then, select “STATISTIC”



Set all the criteria you want to search, and click “SUBMIT” in “STATISTIC” to show the event statistics by DAY in LIST (default) or CHART.

- To check the statistics in the bar chart, click “CHART”.
- To switch to the MONTH or HOUR view, click “DAY” at the bottom.

List View

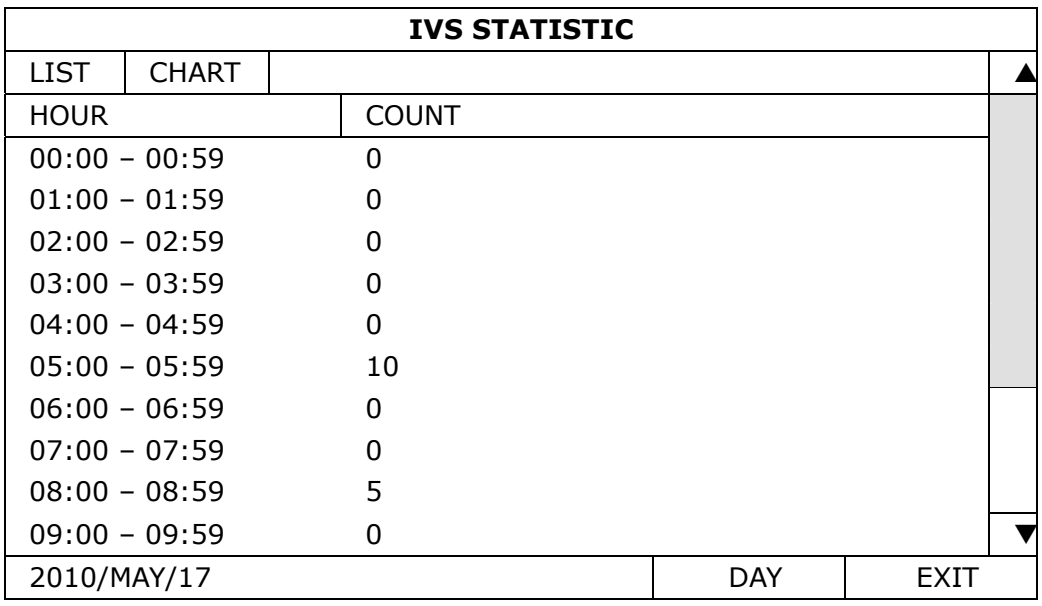
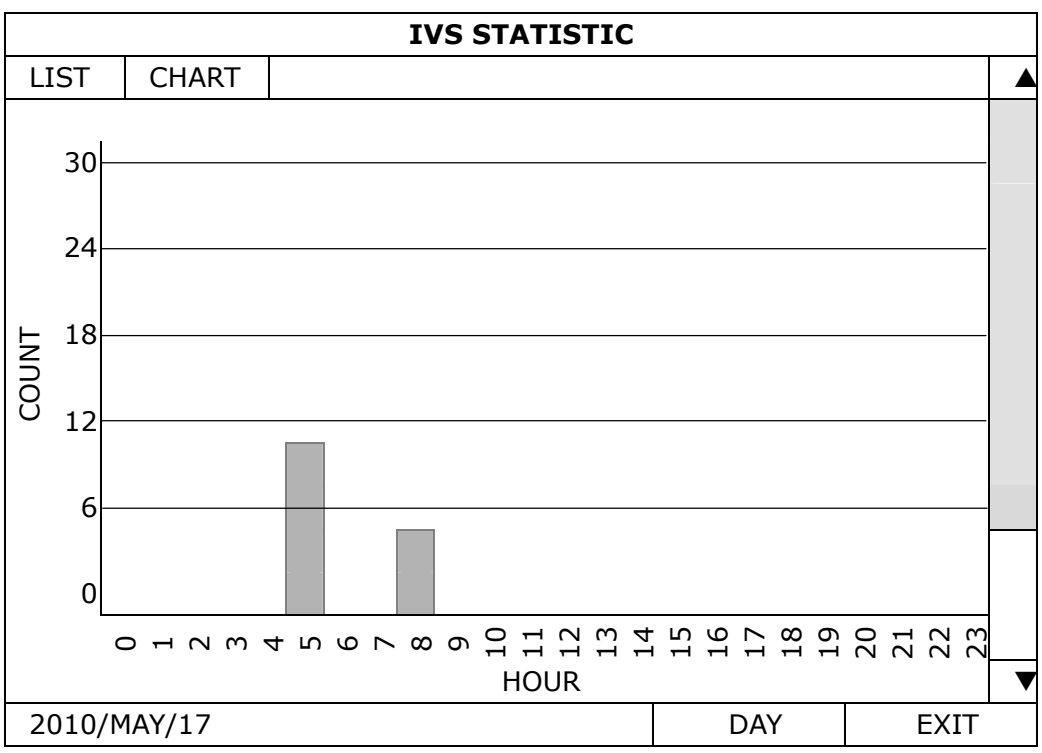
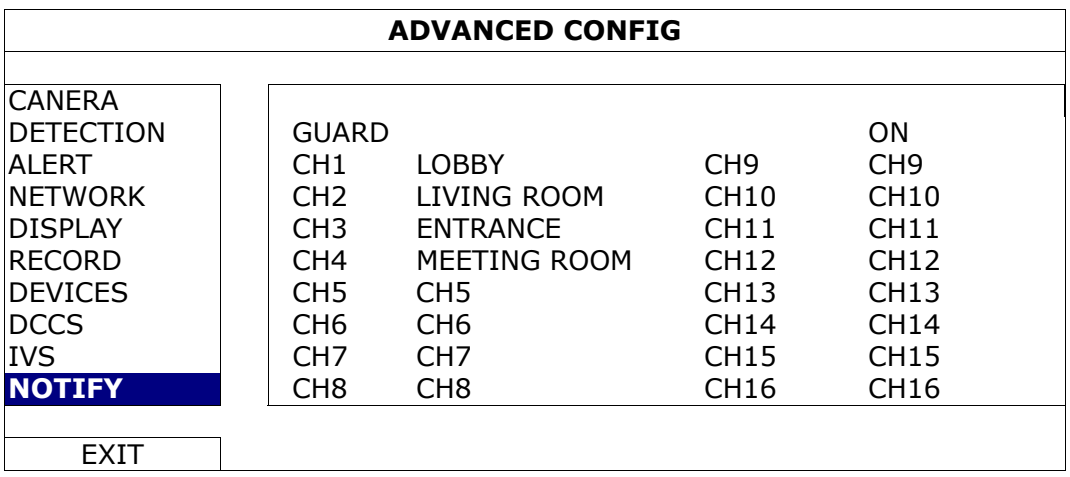


Chart View



5.5.11 NOTIFY

This network camera supports instant event notifications to your iPhone. When a man is detected by an external human detection sensor, the camera will immediately receive the alarm signal and send to your iPhone.



1) GUARD

Select to enable or disable Push Notification function (ON / OFF).
Select to activate the Push Notification function (ON / OFF). Or it could also be activated later from iPhone.

Note: For details about DVR operations from iPhone, please visit http://www.eagleeyescctv.com.

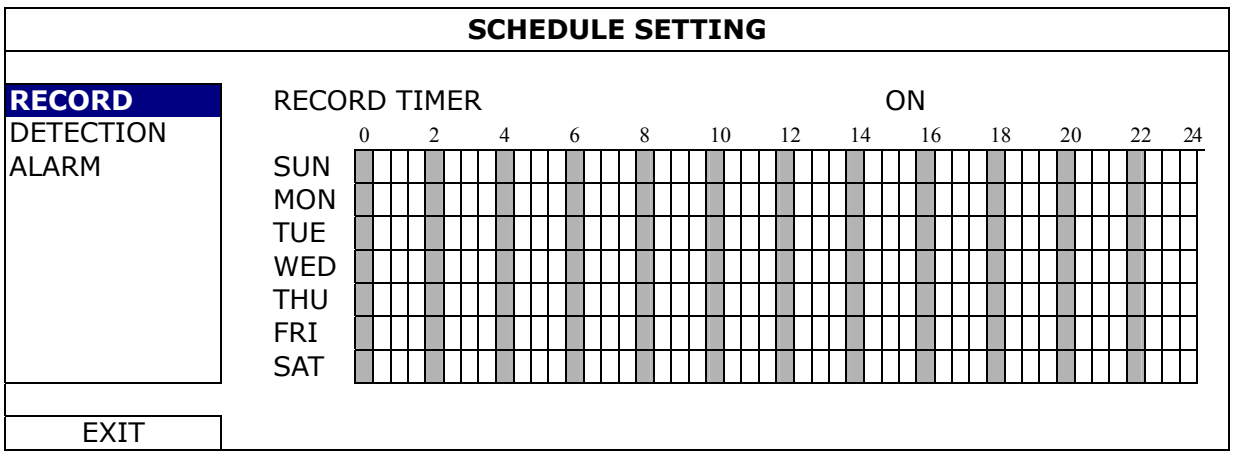
2) CH1 ~ 16 / CH1 ~ 8 / CH1 ~ 4

Enter the text you want to see when your iPhone receives Push Notification. The default text is the channel number.

5.6 SCHEDULE SETTING

5.6.1 RECORD

Select “ON” to enable record timer, and select the day and time for this function.

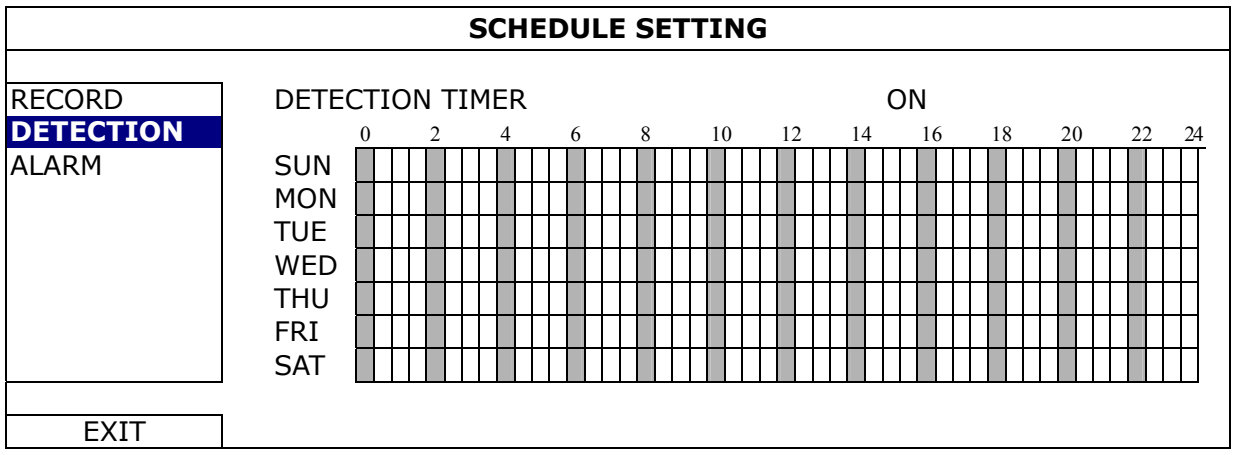


X axis 0 ~ 24 hours. Each time bar is 30 minutes.

Y axis Monday ~ Sunday.

5.6.2 DETECTION

Select “ON” to enable detection timer, and select the day and time for this function.

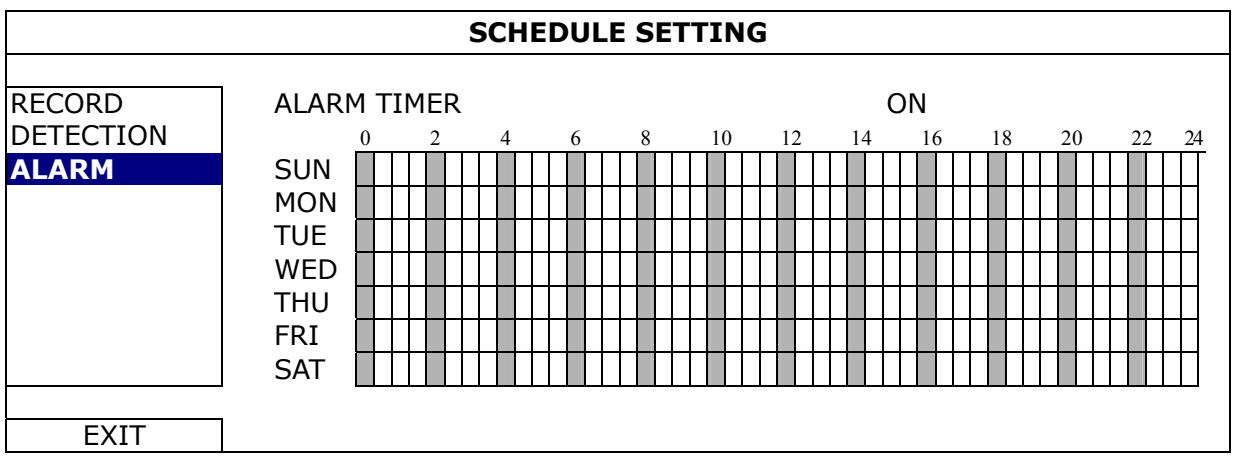


X axis 0 ~ 24 hours. Each time bar is 30 minutes.

Y axis Monday ~ Sunday.

5.6.3 ALARM

Select “ON” to enable alarm timer, and select the day and time for this function.



X axis 0 ~ 24 hours. Each time bar is 30 minutes.

Y axis Monday ~ Sunday.

6. REMOTE OPERATION

You can also control the DVR remotely via the supplied licensed software “Video Viewer”, a web browser (such as Microsoft Internet Explorer, Mozilla Firefox, or Google Chrome), your mobile phone, and Apple’s QuickTime player.

Note: For details about remote operations via your mobile phone, please visit http://www.eagleeyescctv.com.

6.1 Supplied Licensed Software

The sections below describe frequently-used functions of the Video Viewer. For details about this software and network settings, please download its extended user manual from the following link:
http://www.surveillance-download.com/user/CMS.pdf

6.1.1 Installation & Network Connection

1) Install the software

Step1: Place the supplied CD into your CD-ROM or DVD-ROM drive. The program will be automatically run.
Step2: Click “Download The Latest Version” under “Licensed Software AP” to download the latest version of Video Viewer from the Internet.
Step3: Follow the on-screen instructions to finish the installation. When the installation is completed, a shortcut icon “” will be placed on your PC desktop.

2) Network Connection

- Local Connection (via LAN)

LAN is used when it’s the first time to remotely access the DVR and you need to configure the network setting of your DVR based on your network type in advance.

a) Connect the DVR to your PC via a RJ45 network cable. The default DVR values are as follows:

Item	Default Value
IP address	192.168.1.10
User name	admin
Password	admin
Port	80

b) Set the PC’s IP address as “192.168.1.XXX” (1~255, except 10) in order to make the PC and DVR under the same domain.

c) Double-click “ ” on your PC desktop to enter the control panel. By defaults, the “Address Book” panel will be displayed on the right side of the control panel.

d) Click “ ” → “ ” to key in the default IP address, user name, password, and port number of the DVR you intend to connect.

OR

Click “ ” → “ ” to search the available IP address(es) of other DVR(s) under the same domain as your PC’s IP address. The found address(es) will be listed, and can be added into the address book by clicking “ ”.

e) Double-click the IP address you just added into the address book to log in.

➢ Remote Connection (via Internet)

When the network configuration of your DVR is completed, you can access your DVR remotely via Internet.

a) Double-click " " on your PC desktop to enter the control panel. By defaults, the "Address Book" panel will be displayed on the right side of the control panel.

b) Click " " → " " to key in the IP address, user name, password, and port number of the DVR you intend to connect.

OR

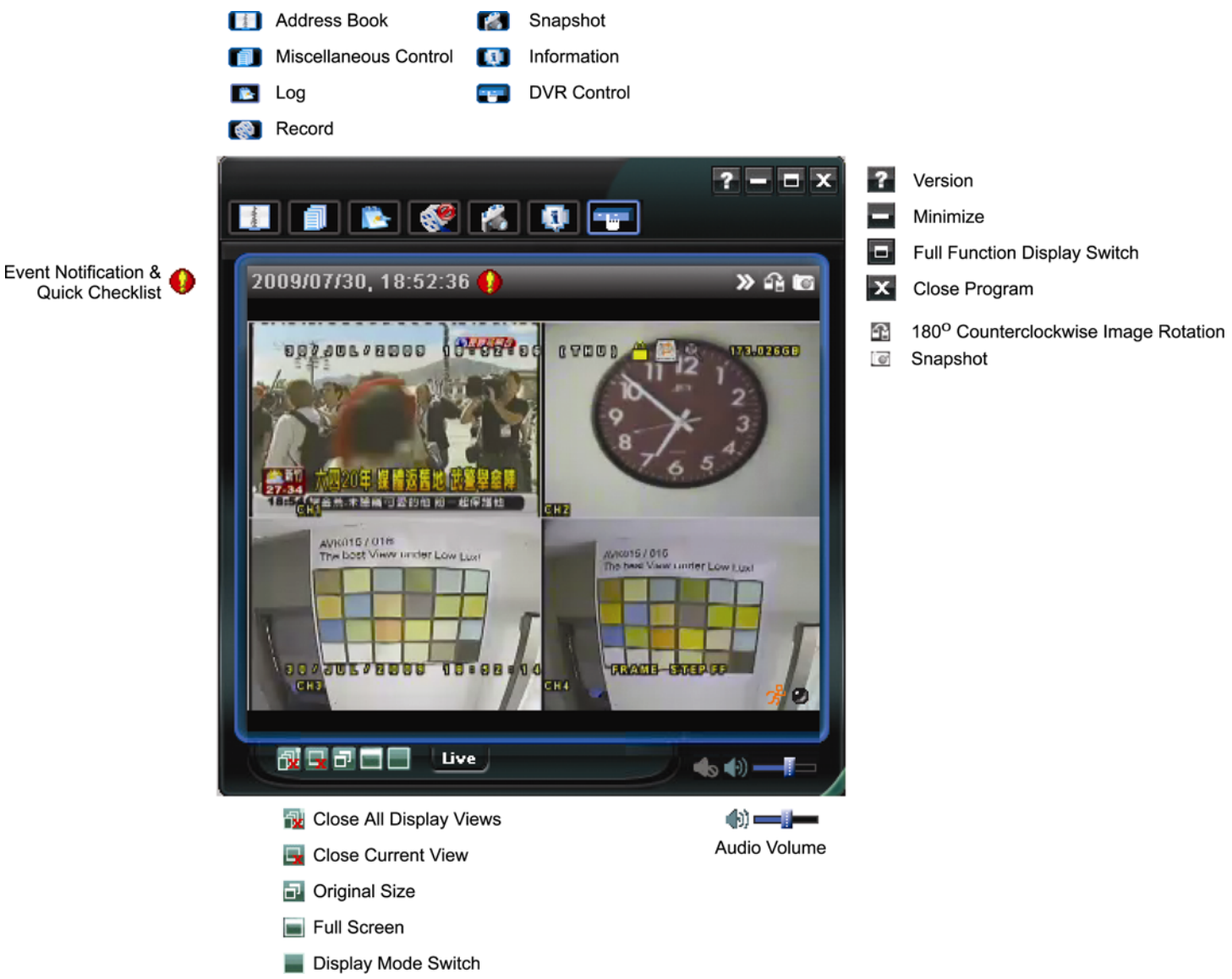
Click " " → " " to search the available IP address(es) of other DVR(s) under the same domain as your PC's IP address. The found address(es) will be listed, and can be added into the address book by clicking " ".

c) Double-click the IP address you just added into the address book to log in.

6.1.2 Control Panel Overview

Two control panels are available and can be switched depending on your use habit.

<u>Simplified Version (Default)</u>



Full Function Version

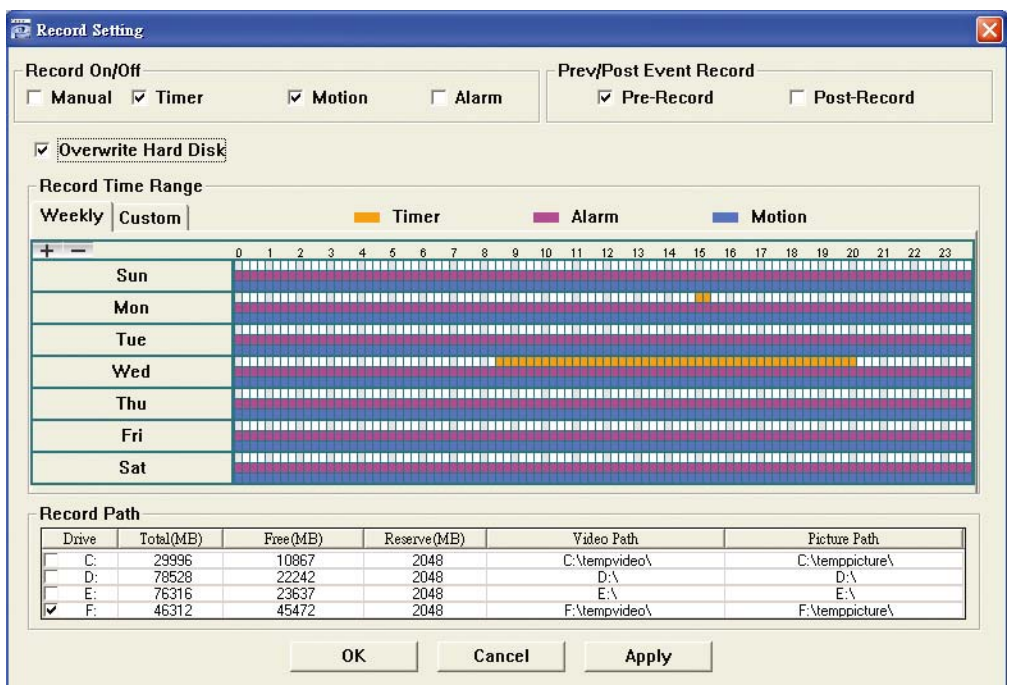
Main Button Overview

Button		Function	Description		
Simplified	Full Function				
		Address Book	Click to show the predefined IP address(es). You can add, remove or search the IP address to log in the DVR remotely.		
		Miscellaneous Control		Remote Config	Click to go into the detailed DVR setting.
				Record Setting	Click to go to the detailed record setting.
				Custom Setting	Click to choose the language of this program. The language change will take effect when this program is closed and executed again.
		Log	Click to view all event and recording logs, search the desired log(s) by date, or playback the recording of the selected log.		
		Record / Record Stop	Click to start / stop the manual recording.		
		Snapshot	Click to take a snapshot of the current view. The snapshot will be saved in the path you specified in “Record Setting”.		
		Information	Click to show the current network connection details.		
		DVR Control	Click to go to the DVR control panel to operate the DVR remotely.		

6.1.3. General Operation

Record

To record remotely at the same time for any event or alarm at the DVR side, click “ ” or “ ” → “ ” to go to the “Record Setting” page.



In the “Record Setting” page, you can set the following items:

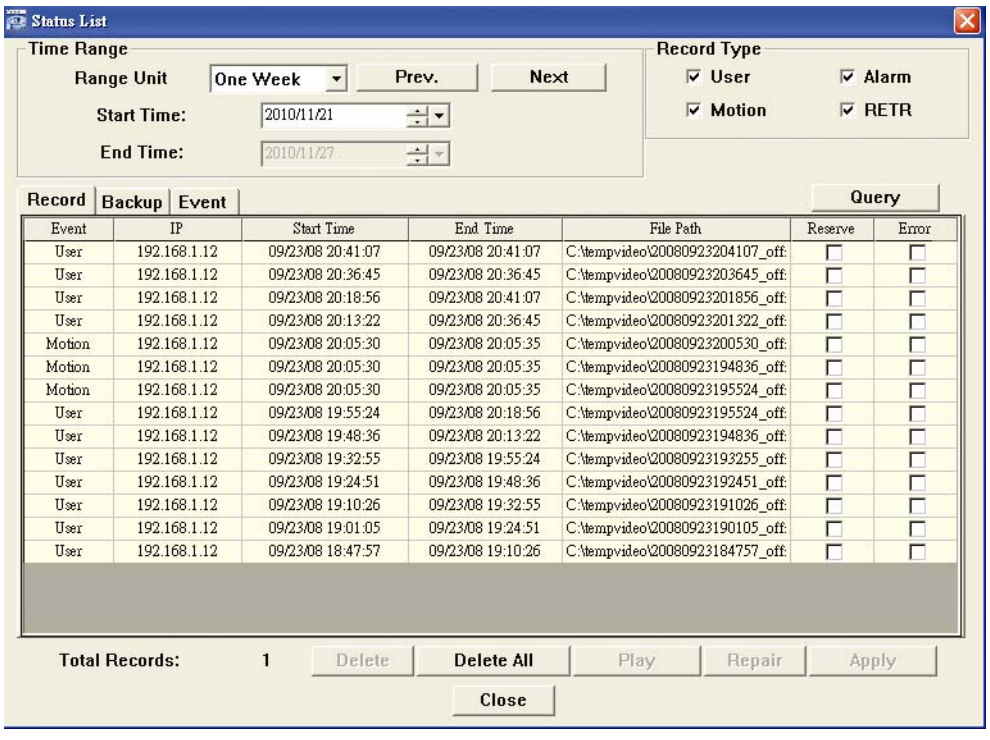
- Record type
- Hard disk overwriting
- Pre- / post-alarm record time
- Record time setting
- Record path

If “Manual” is checked, click “ ” or “ ” on the main control panel to start the manual recording immediately, and the recordings will be saved in the specified location.

If “Motion” and / or “Alarm” are checked, the recording function will also be enabled at the remote side when any event is triggered at the DVR side, and the recordings will be saved in the specified location.

Playback

To play a recording, click “ ” or “ ”, and select the “Record” tab or “Backup” tab. A list of all the recordings will be shown by defaults, and you can also sort out the logs you want to speed up the search time.

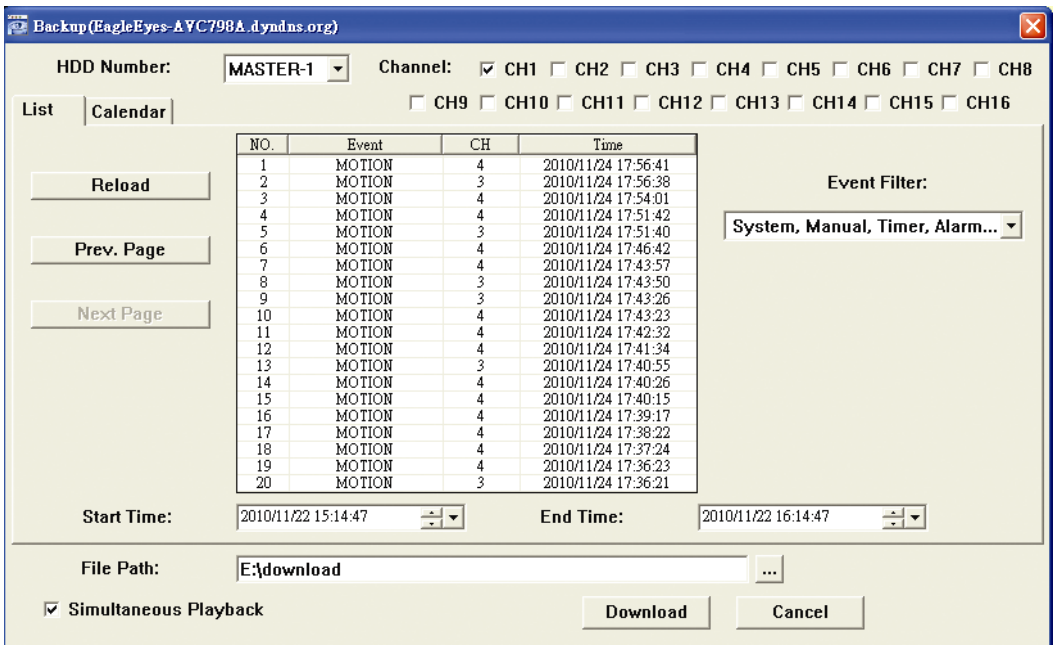


To immediately play a recording, select a log from the list, and click “Play”, or double-click the selected log.

Network Backup

Click “” → “”, or click “” to go into the “Backup” page as follows, and you can select a specific time range or event to make a video backup remotely.

The file(s) you backup will be from the currently selected IP address.



Function	Description
HDD Number / Channel	Specify the hard disk (HDD Number) and channel number (Channel) within which have the video data you need.
Download by Time	Specify the time range within which has the video data you want in the “Start Time” and “End Time” columns.
Download by Event	Select an event log from the event list. This list shows all logs in the specified DVR from the latest to the earliest. ➢ To quickly find the events you need, check or uncheck the event type “System” / “Manual” / “Alarm” / “Motion”, and select the log you want. ➢ To view the earlier or later logs that are not shown in the current page, click “Prev. Page” or “Next Page”. • To refresh the event list, click “Reload”.
File Path	Assign the location where the backup files are saved.

Function	Description
Simultaneous Playback	To view the backup images simultaneously when the download process is in progress, select the checkbox “Simultaneous Playback”. You will see the backup images while the images are being downloaded to the PC or notebook. To simply backup images without previewing, deselect the checkbox “Simultaneous Playback”. You will only see a message box indicating the total time needed, the current status and the saving location.
Download / Cancel	Click “Download” to start or “Cancel” to discard the video backup.

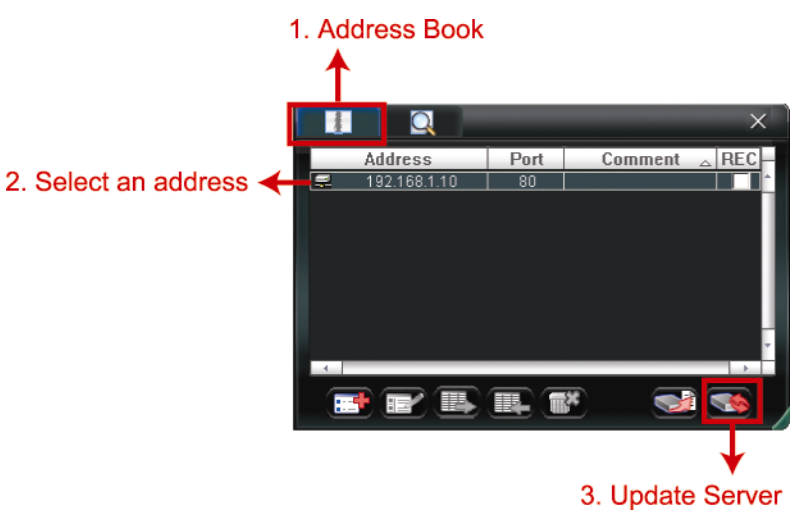
Firmware Upgrade

This function is used to grade your DVR for function scalability.

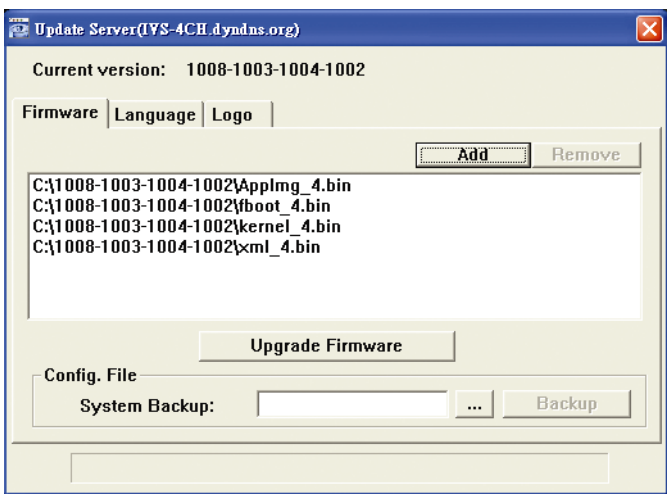
Note: Before using this function, make sure you have the correct upgrade files provided by your installer or distributor.

Step1: Click “ ”, and select the IP address of your device in the address book.

Step2: Click “ ” to show the upgrade page, “Update Server”.



Step3: Click “Add” to browse to the upgrade files.



Step4: Click “Upgrade Firmware” to start firmware upgrade.

Note: It takes a few minutes to finish the upgrade process. Do not disconnect the power during firmware upgrade, or the upgrade may be failed. The device will reboot after the upgrade.

Step5: Select the IP address of the device and click “ ” again to check if the firmware is upgraded.

6.1.4. E-Map

Video Viewer is also a Central Management System (CMS) software, which allows network device control & management for up to 16 devices simultaneously.

Note: Before using this function, make sure Video Viewer is connected to all the devices (up to 16) you want to monitor.

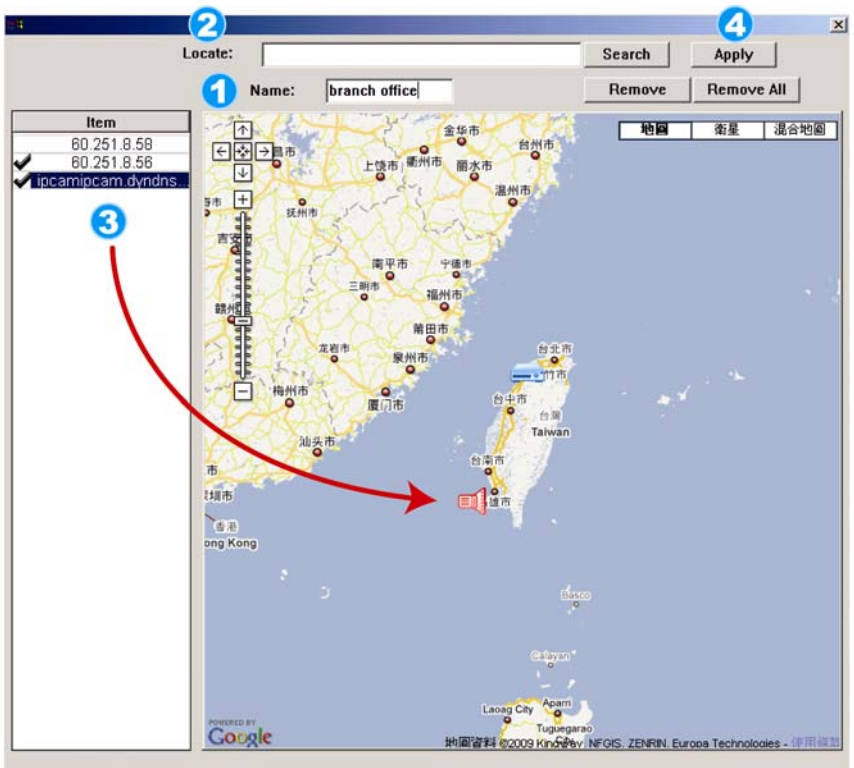
E-Map is **ONLY** available when the control panel is switch to the full function version.

How to Add an E-Map Group

STEP1: In the simplified version, click " " to switch the control panel to the full function version, and click " " to enter the E-Map page as follows.

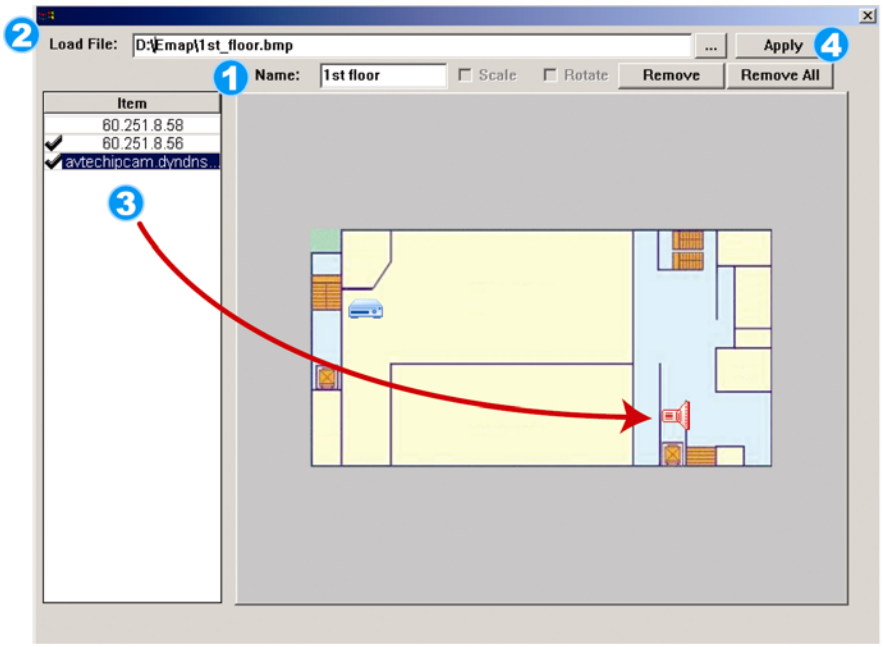
Note: To know where the buttons are, please refer to "Simplified Version (Default) at page 39, and "Full Function Version" at page 40.

STEP2: Right-click to show the shortcut menu on the top-left panel, and select the E-Map group you want to add. There are three E-Map groups you can add: Google E-MAP, Single E-MAP, and Building E-MAP.



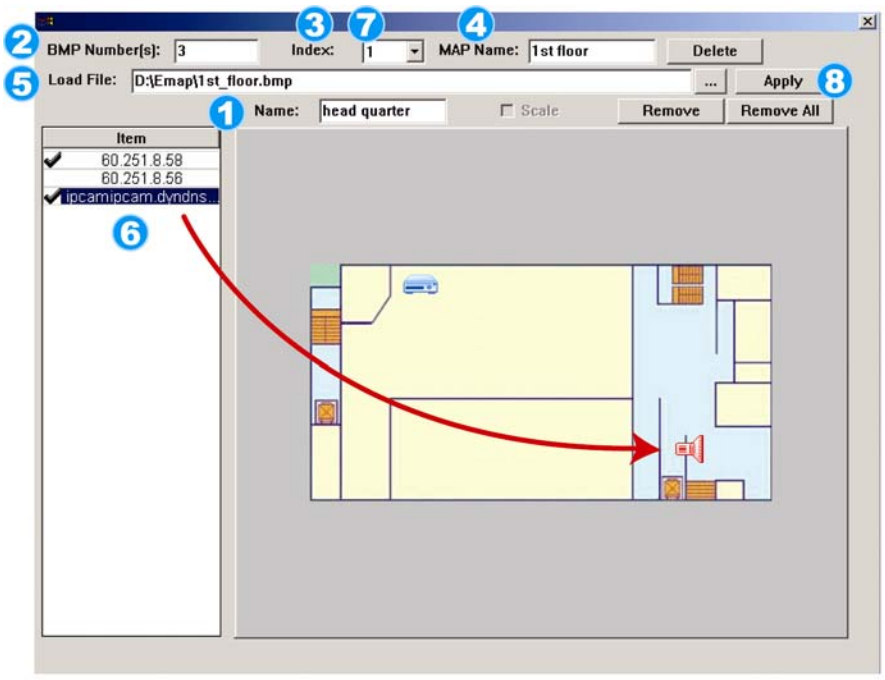
How to add a Google E-Map group:

1. Enter the name of this Google E-Map group.
2. Enter a specific address or landmark, and click "Search".
   OR
   Move to the map and drag to the location you want.
3. Click and drag the IP address to where it's located in the current level.
4. Click "Apply" to save and finish.



How to add a single E-Map group:

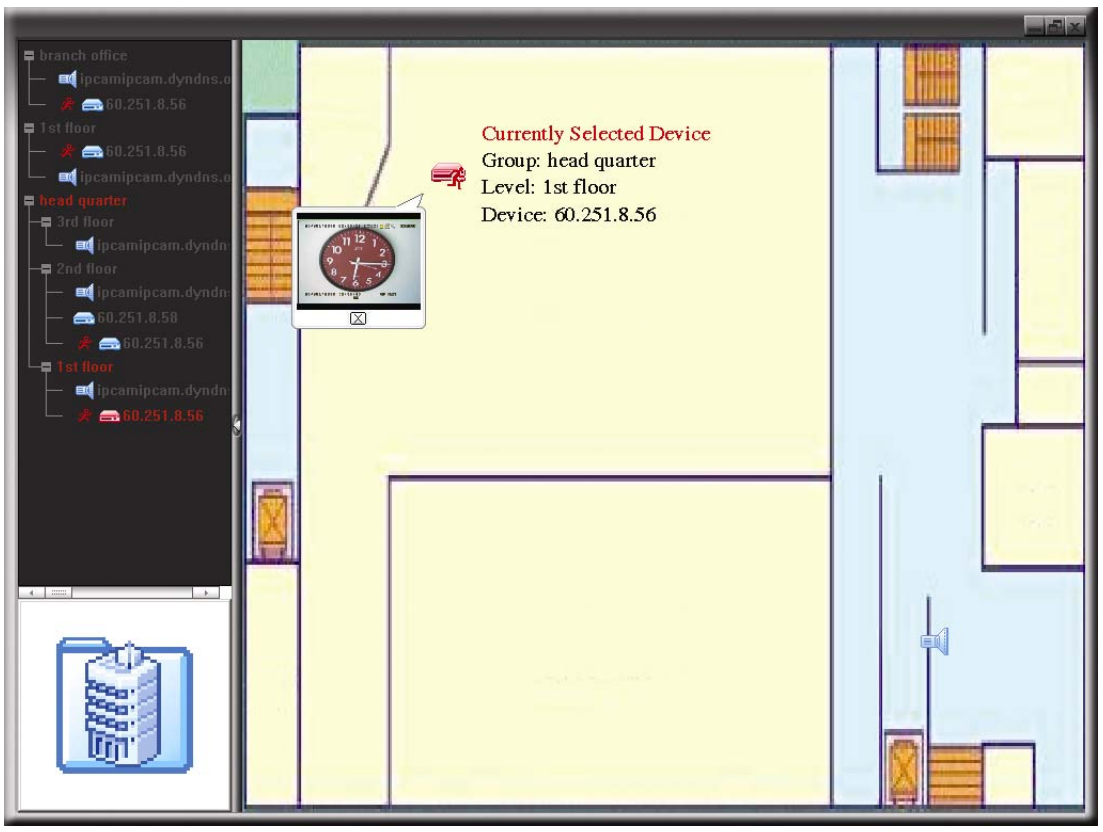
1. Enter the name of this single E-Map group.
2. Click "..." to browse the map file in BMP or JPEG.
3. Click and drag the IP address to where it's located in the current level.
4. Click "Apply" to save and finish.



How to add a building E-Map group:

1. Enter the name of this building E-Map group.
2. Enter the total levels of this building.
3. Select the level of the building from the drop-down list.
4. Enter the name of the level.
5. Click "..." to browse the map file in BMP or JPEG.
6. Click and drag the IP address to where it's located in the current level.
7. Go back to STEP 3 to select other level of the building, and repeat from STEP 3 to 6 until the setup for all levels are finished.
8. Click "Apply" to save and finish.

STEP3: When the E-Map group is created, you will see the tree on the top-left panel, showing all the devices you've added to this group.



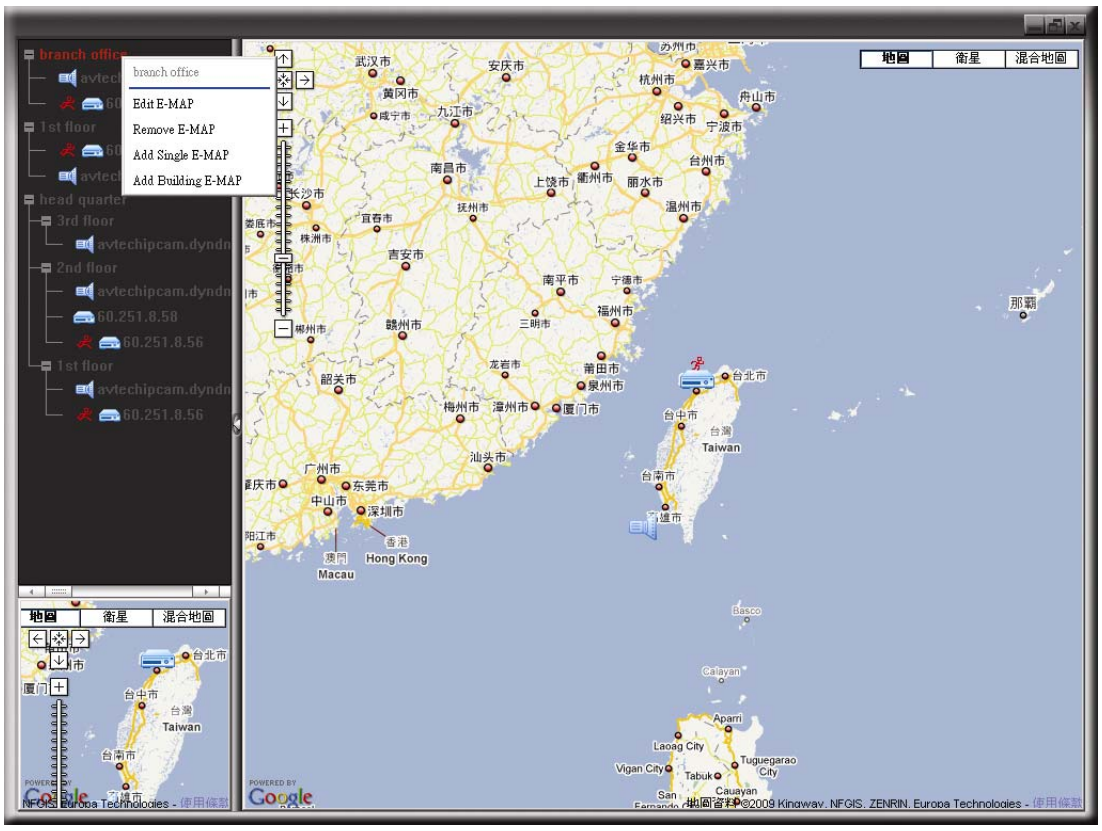
Icon	Description
	The connected device is camera. When it's selected, it will become red.
	The connected device is DVR. When it's selected, it will become red.
	For any motion or alarm event, it will appear on the screen to catch your attention. To know what's happening quickly, double-click the device icon on the E-Map to show the live view.

How to Edit / Remove an Existing E-Map Group

- For Google E-Map Group

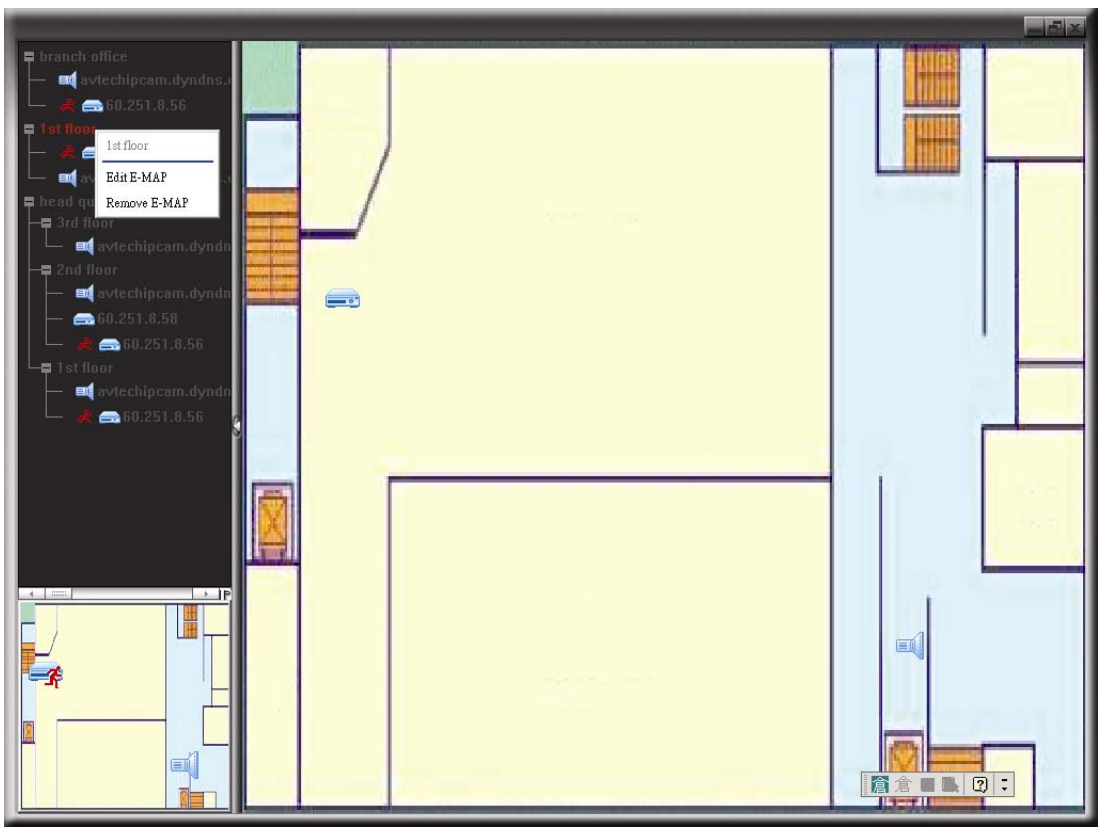
  Right-click on the group name to show the shortcut menu list, and select "Edit E-MAP" or "Remove E-MAP" as needed.

  You can also add a single E-Map group (Add Single E-MAP) or Building E-Map group (Add Building E-MAP) into the existing Google E-Map group.



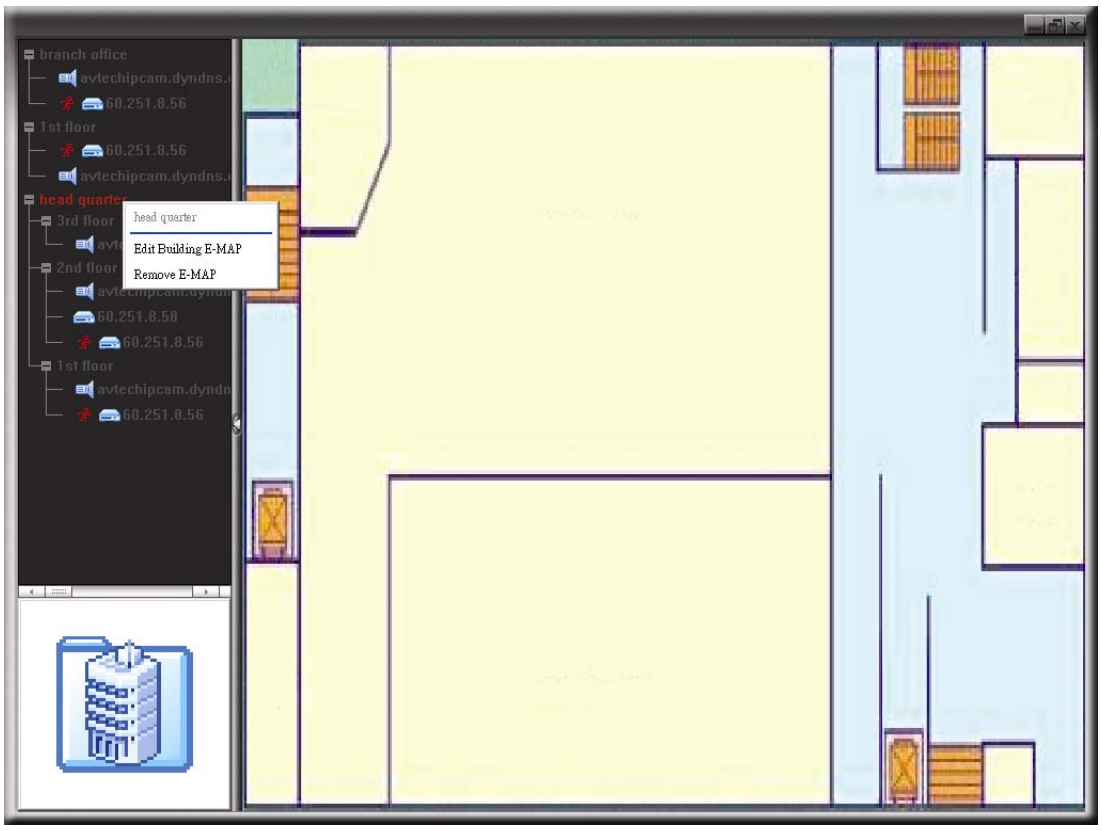
➢ For Single E-Map Group

Right-click on the group name to show the shortcut menu list, and select “Edit E-MAP” or “Remove E-MAP” as needed.

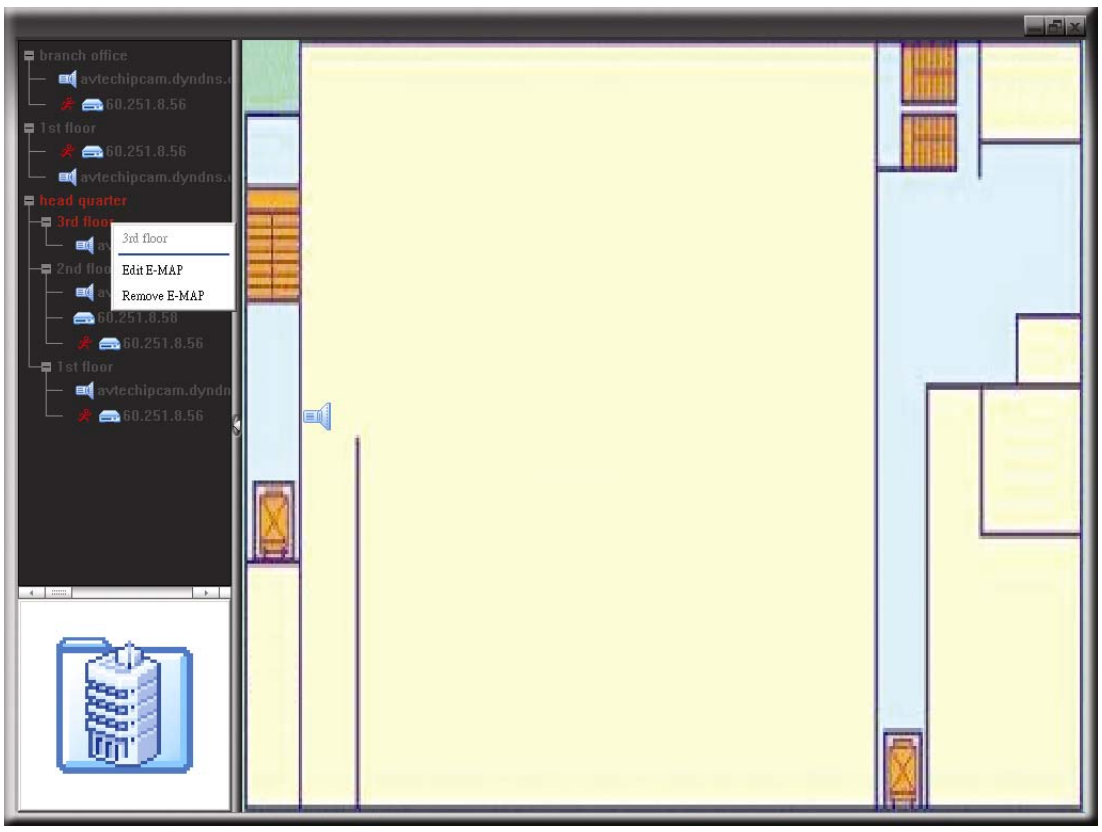


➢ For Building E-Map Group

Right-click on the group name to show the shortcut menu list, and select “Edit Building E-MAP” or “Remove E-MAP” as needed.



To edit or remove a certain level of the building E-Map group, right click on the level name, and select “Edit E-MAP” or “Remove E-MAP” as needed.



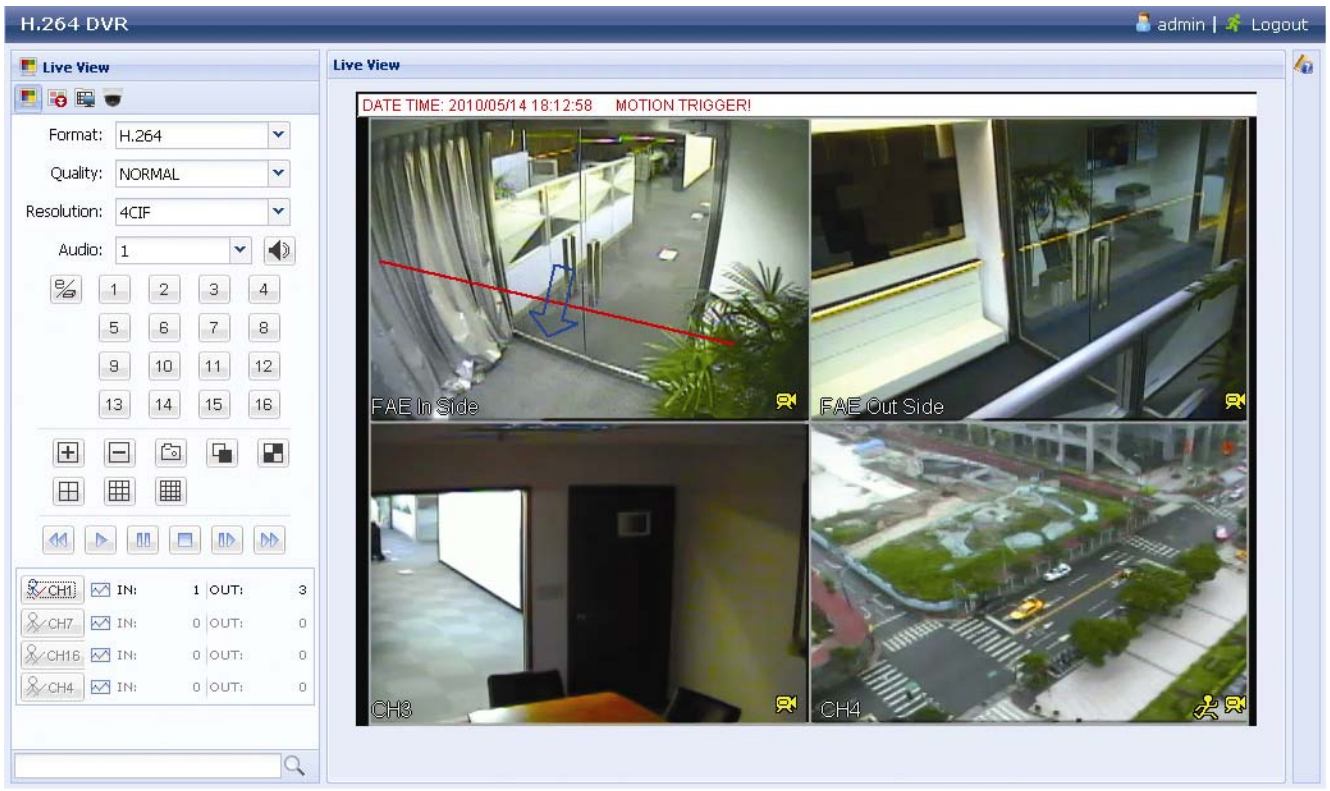
6.2 Web Browser

You can view the images or operate your DVR with a web browser, for example, Microsoft Internet Explorer.

Note: The supported PC operation systems are Windows 7, Vista & XP.

Step 1: Key in the IP address used by your DVR in the URL address box, such as 60.121.46.236, and press Enter. You will be prompted to enter the user name and password to access the DVR.
If the port number your DVR used is NOT 80, you need to key in the port number additionally. The format is ***ipaddress*:*portnum***. For example, for IP address 60.121.46.236 and port No. 888, please key in ”http://60.121.46.236:888” into the URL address box, and press “Enter”.

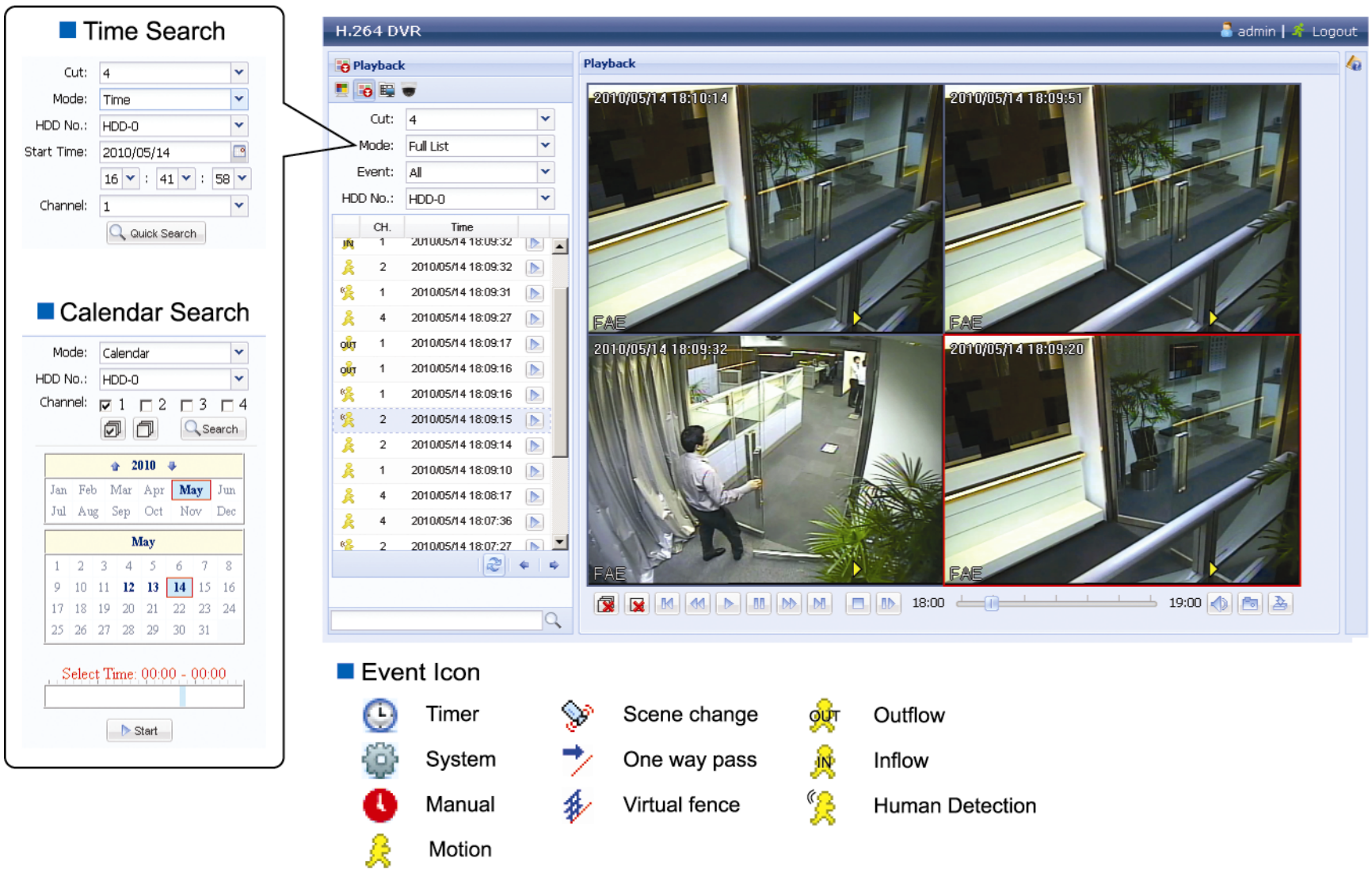
Step 2: Enter the user name and password, the same as the ones used at AP login, and click “OK”. You will see a similar screen as the following when the login information is correct.



Icon	Description
	Click to go to the live view of the DVR.
	Click to enter the playback panel where you can search or select the event you want to play and download to your PC simultaneously. For details, please refer to “6.2.1 Event Playback & Download” at page 51.
	Click to go to the detailed DVR setting.
	Click to enter the PTZ mode.
Video / Audio Control	
Format	**H.264 / QuickTime** QuickTime is Apple Inc.’s multimedia software. You need to have QuickTime installed in you operation system first. When “QuickTime” is selected, you will be promoted to enter the user name and password to access the server of the DVR.
Quality	**BEST / HIGH / NORMAL / BASIC** Select the image quality.
Resolution	**4 CIF / CIF** Select the image resolution (4CIF: 704*480 / CIF: 352*240)
Audio	Select the audio channel you want for listening to the live audio. Note: Your camera must support audio recording, and connect to the video channel which supports audio recording and the audio input of the DVR. For details, please refer to “1.3 Rear Panel” at page 2. means mute. To disable the mute status, click this icon again and select the audio channel you want.

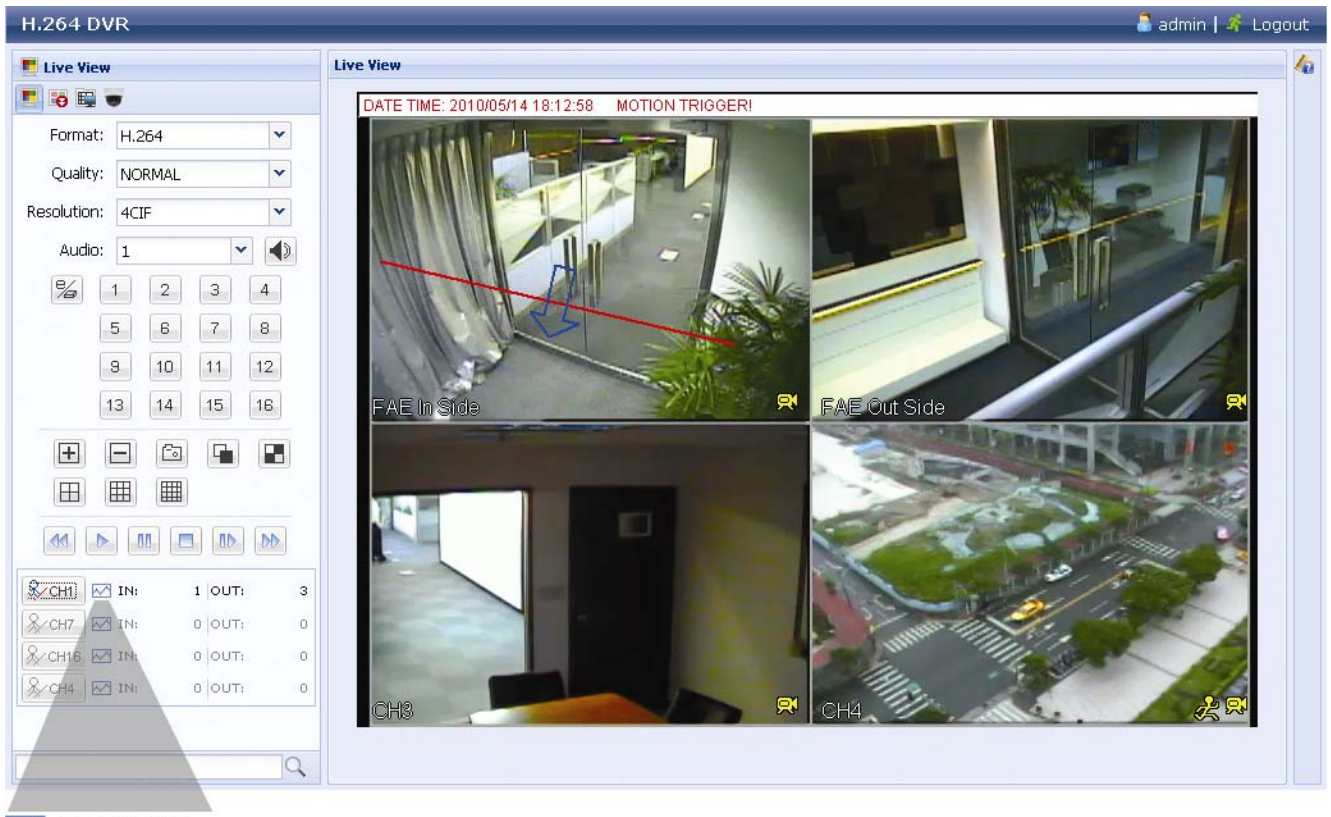
Icon	Description
Channel Control	Click to enable the remote independent operation. This icon will turn to blue, and only the available function icons will be shown. Note: This button shows only for 16CH and 8CH models.
Channel Selection (1~16 / 1~8 / 1~4)	Click one of the number to switch to the channel you want to see in full screen.
/	Click to go to the previous / next channel, or change setting.
	Click to take a snapshot of the current view, and save it to the specified path in your PC set in " " → "General".
/	: Click to display four channels at a time. : Click to display each channel one by one, starting from CH1. When the last channel is displayed, it will start from CH1 again. To exit from this display mode, press any other channel display button.
/ /	Click to show 4-cut / 9-cut / 16-cut display.
Playback Control	Increase the speed for fast rewind. Click once to get 4X speed rewind and click twice to get 8X speed, etc., and the maximum speed is 16X.
	Increase the speed for fast forward. Click once to get 4X speed forward and click twice to get 8X speed, etc., and the maximum speed is 16X.
	Click to play the current video clip.
	Click to pause the video playback.
	Click to stop the video playback.
	Click to play the video clip slowly, once to get 4X slower, twice get 8X slower.
IVS Panel	This button is enabled only when the IVS mode is "Flow Counting". Click to show the detection line.
	Click to enter the IVS statistics page. For details, please refer to "6.2.2 IVS Statistics" at page 52.

6.2.1 Event Playback & Download



/	Close all / Close	Click to close the current playback video clip (in the red frame), or to close all playback video clips.
/	Previous / Next Hour	Click to jump to the next / previous time interval in an hour, for example, 11:00 ~ 12:00 or 14:00 ~ 15:00, and start playing the earliest event video clip recorded during this whole hour.
	Fast Forward	Increase the speed for fast rewind. Click once to get 4X speed rewind and click twice to get 8X speed, etc., and the maximum speed is 16X.
	Fast Rewind	Increase the speed for fast forward. Click once to get 4X speed forward and click twice to get 8X speed, etc., and the maximum speed is 16X.
	Play	Click to play the current video clip.
	Pause	Click to pause the video playback.
	Stop	Click to stop the video playback.
	Step	In the pause mode, click to get one frame forward.
	Audio	Click to mute the playback if necessary, and click again to restore. **Note:** Audio is available when your camera supports audio recording, and connects to the video channel which supports audio recording and the audio input of the DVR. For details, please refer to "1.3 Rear Panel" at page 2.
	Snapshot	Click to take a snapshot of the current view, and save it to the specified path in your PC set in " " → "General".
	Download	Click to download the current video clip to the specified path in your PC.

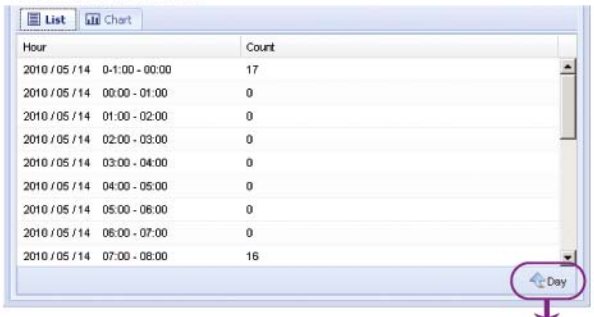
6.2.2 IVS Statistics



IVS Statistics: Event Search Panel

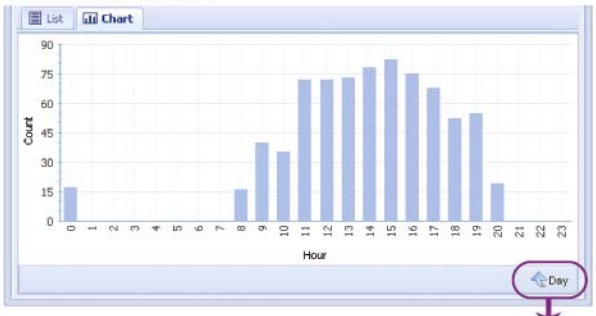
IVS Statistics
Channel: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Event: Alarm Motion Inflow Outflow Virtual Fence Oneway Human Detection
HDD No.: HDD-0
Date: 2010/05/14
Search

IVS Statistics: List



Click to switch between the Day / Month / Year view

IVS Statistics: Chart



Click to switch between the Day / Month / Year view

APPENDIX 1 SPECIFICATIONS

		AVD748BD	AVD746BD
Video System		NTSC / PAL (auto detection)	
Video Compression Format		H.264	
Video Input (composite video signal 1 Vp-p 75Ω BNC)		16 channels	8 channels
Video Loop Output (composite video signal 1 Vp-p 75Ω BNC)		16 channels	8 channels
Video Output (BNC)	Main Monitor	For stable display	
	Call Monitor	For sequence display	
Video Output (VGA)		Built-in (Output resolution up to 1600 x 1200)	
Audio Input / Output		4 audio inputs, 2 audio outputs (Mono)	
Maximum Recording Rate	Frame	704×480 pixels with 120 IPS <NTSC> / 704×576 pixels with 100 IPS <PAL>	704×480 pixels with 60 IPS <NTSC> / 704×576 pixels with 50 IPS <PAL>
	Field	704x240 pixels with 240 IPS <NTSC> / 704×288 pixels with 200 IPS <PAL>	704x240 pixels with 120 IPS <NTSC> / 704×288 pixels with 100 IPS <PAL>
	CIF	352×240 pixels with 480 IPS <NTSC> / 352×288 pixels with 400 IPS <PAL>	352×240 pixels with 240 IPS <NTSC> / 352×288 pixels with 200 IPS <PAL>
DCCS Support		YES (All channels)	
IVS Support		YES (4 channels)	
Image Quality Setting		SUPER BEST / BEST / HIGH /NORMAL	
Hard Disk Storage		Accommodates 2 SATA HDDs (1 HDD capacity up to 2TB)	
Quick Search		Time / Motion / Alarm search mode	
SATA Interface		Built-in	
Recording Mode		Manual / Timer / Motion / Alarm / Remote	
Multiplex Operation		Live display / record / playback / backup / network operations	
USB Mouse Control		YES	
Motion Detection Area		16 × 12 grids per camera for all channels	
Motion Detection Sensitivity		3 adjustable parameters for accurate detection	
Pre-alarm Recording		YES	
Backup Device		DVD Writer / USB 2.0 flash drive / Network	
Web Transmitting Compression Format		H.264	
Network Live Audio		YES	
Ethernet		10/100 Base-T. Supports remote control and live view via Ethernet	
Web Interface (Operating System: Windows 7 / Vista / XP)	CMS:	Our self-developed and free software, “Video Viewer”	
	Web Browser:	Internet Explorer, Mozilla Firefox, Google Chrome, Safari & Opera.	
	Media Player:	QuickTime	
	Max. on-line user:	10	
Network Protocol		TCP/IP, PPPOE, DHCP and DDNS	
Remote Independent Operation		YES	
Event Notification		FTP / E-Mail	
R.E.T.R. (Remote Event Trigger Recording)		YES	
IR Remote Control		YES (IR receiver built-in)	
Mobile Surveillance		YES (including iPhone, BlackBerry, Windows Mobile, Symbian & Android)	
Picture Zoom		2X digital zoom	
PTZ Control		YES	

	AVD748BD	AVD746BD
Alarm I/O	16 inputs, 1 output	8 inputs, 1 output
Key Lock (Password Protection)	YES	
Local User Level	Administrator & Operator	
Video Loss Detection	YES	
Camera Title	Supports up to 12 letters	
Video Adjustable	Hue / Saturation / Contrast / Brightness	
Date Display Format	YY/MM/DD, DD/MM/YY & MM/DD/YY	
Daylight Saving	YES	
Power Source (±10%)	DC 19V	
Power Consumption (±10%)	< 64 W	
Operating Temperature	10℃ ~ 40℃ (50℉~104℉)	
Dimensions (mm)**	432(W) × 90(H) × 326(D)	
System Recovery	System auto recovery after power failure	
Optional Peripherals	Keyboard controller	

* The specifications are subject to change without notice.
** Dimensional Tolerance: ±5mm

		AVD744B	AVD744BD
Video System		NTSC / PAL (auto detection)	
Video Compression Format		H.264	
Video Input (composite video signal 1 Vp-p 75Ω BNC)		4 channels	
Video Output (BNC)	Main Monitor	For stable display	
	Call Monitor	For sequence display	
VGA Output (VGA)		Built-in (Output resolution up to 1600 x 1200)	
Audio Input / Output		4 audio inputs, 1 audio output (Mono)	
Maximum Recording Rate	Frame	704×480 pixels with 30 IPS <NTSC> / 704×576 pixels with 25 IPS <PAL>	
Maximum Recording Rate	Field	704×240 pixels with 60 IPS <NTSC> / 704×288 pixels with 50 IPS <PAL>	
Maximum Recording Rate	CIF	352×240 pixels with 120 IPS <NTSC> / 352×288 pixels with 100 IPS <PAL>	
DCCS Support		YES (All channels)	
IVS Support		YES (4 channels)	
Image Quality Setting		SUPER BEST / BEST / HIGH /NORMAL	
Hard Disk Storage (One HDD capacity up to 2TB)		Accommodates 2 SATA HDDs	Accommodates 1 SATA HDD
Quick Search		Time / Motion / Alarm search mode	
SATA Interface		Built-in	
Recording Mode		Manual / Timer / Motion / Alarm / Remote	
Multiplex Operation		Live display / record / playback / backup / network operations	
USB Mouse Control		YES	
Motion Detection Area		16 × 12 grids per camera for all channels	
Motion Detection Sensitivity		3 adjustable parameters for accurate detection	
Pre-alarm Recording		YES	
Backup Device		USB 2.0 flash drive / Network	DVD Writer / USB 2.0 flash drive / Network
Web Transmitting Compression Format		H.264	
Network Live Audio		YES	
Ethernet		10/100 Base-T. Supports remote control and live view via Ethernet	
Web Interface (Operating System: Windows 7 / Vista / XP)	CMS:	Our self-developed and free software, “Video Viewer”	
	Web Browser:	Internet Explorer, Mozilla Firefox, Google Chrome, Safari & Opera.	
	Media Player:	QuickTime	
	Max. on-line user:	10	
Network Protocol		TCP/IP, PPPOE, DHCP and DDNS	
Remote Independent Operation		YES	
Event Notification		FTP / E-Mail	
R.E.T.R. (Remote Event Trigger Recording)		YES	
IR Remote Control		YES (IR receiver built-in)	
Mobile Surveillance		YES (including iPhone, BlackBerry, Windows Mobile, Symbian & Android)	
Picture Zoom		2X digital zoom	
PTZ Control		YES	
Alarm I/O		4 inputs, 1 output	
Key Lock (Password Protection)		YES	
Local User Level		Administrator & Operator	
Video Loss Detection		YES	
Camera Title		Supports up to 12 letters	
Video Adjustable		Hue / Saturation / Contrast / Brightness	

	AVD744B	AVD744BD
Date Display Format	YY/MM/DD, DD/MM/YY & MM/DD/YY	
Daylight Saving	YES	
Power Source (±10%)	DC 19V	
Power Consumption (±10%)	< 42 W	
Operating Temperature	10℃ ~ 40℃ (50℉~104℉)	
Dimensions (mm)**	343(W) × 59(H) × 223(D)	
System Recovery	System auto recovery after power failure	
Optional Peripherals	Keyboard controller	

* The specifications are subject to change without notice.
** Dimensional Tolerance: ±5mm

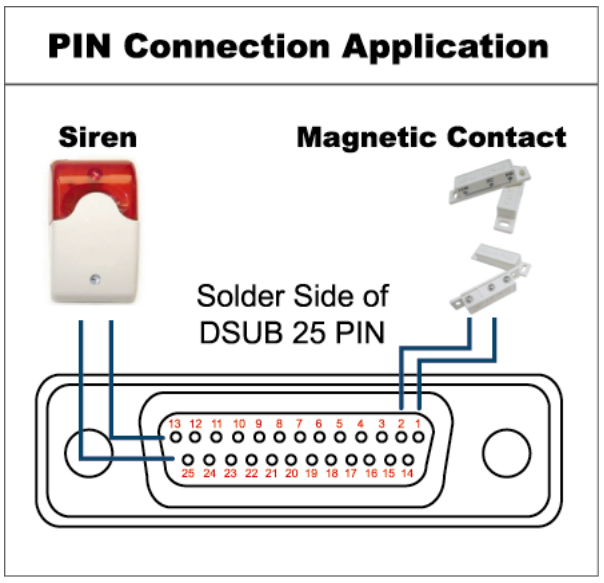
		AVD744C	AVD744CD
Video System		NTSC / PAL (auto detection)	
Video Compression Format		H.264	
Video Input (composite video signal 1 Vp-p 75Ω BNC)		4 channels	
Video Output (BNC)	Main Monitor	For stable display	
	Call Monitor	For sequence display	
VGA Output (VGA)		Built-in (Output resolution up to 1600 x 1200)	
Audio Input / Output		4 audio inputs, 1 audio output (Mono)	
Maximum Recording Rate	Frame	704×480 pixels with 120 IPS <NTSC> / 704×576 pixels with 100 IPS <PAL>	
Maximum Recording Rate	Field	704×240 pixels with 120 IPS <NTSC> / 704×288 pixels with 100 IPS <PAL>	
Maximum Recording Rate	CIF	352×240 pixels with 120 IPS <NTSC> / 352×288 pixels with 100 IPS <PAL>	
DCCS Support		YES (All channels)	
IVS Support		YES (4 channels)	
Image Quality Setting		SUPER BEST / BEST / HIGH /NORMAL	
Hard Disk Storage (One HDD capacity up to 2TB)		Accommodates 2 SATA HDDs	Accommodates 1 SATA HDD
Quick Search		Time / Motion / Alarm search mode	
SATA Interface		Built-in	
Recording Mode		Manual / Timer / Motion / Alarm / Remote	
Multiplex Operation		Live display / record / playback / backup / network operations	
USB Mouse Control		YES	
Motion Detection Area		16 × 12 grids per camera for all channels	
Motion Detection Sensitivity		3 adjustable parameters for accurate detection	
Pre-alarm Recording		YES	
Backup Device		USB 2.0 flash drive / Network	DVD Writer / USB 2.0 flash drive / Network
Web Transmitting Compression Format		H.264	
Network Live Audio		YES	
Ethernet		10/100 Base-T. Supports remote control and live view via Ethernet	
Web Interface (Operating System: Windows 7 / Vista / XP)	CMS:	Our self-developed and free software, “Video Viewer”	
	Web Browser:	Internet Explorer, Mozilla Firefox, Google Chrome, Safari & Opera.	
	Media Player:	QuickTime	
	Max. on-line user:	10	
Network Protocol		TCP/IP, PPPOE, DHCP and DDNS	
Remote Independent Operation		YES	
Event Notification		FTP / E-Mail	
R.E.T.R. (Remote Event Trigger Recording)		YES	
IR Remote Control		YES (IR receiver built-in)	
Mobile Surveillance		YES (including iPhone, BlackBerry, Windows Mobile, Symbian & Android)	
Picture Zoom		2X digital zoom	
PTZ Control		YES	
Alarm I/O		4 inputs, 1 output	
Key Lock (Password Protection)		YES	
Local User Level		Administrator & Operator	
Video Loss Detection		YES	
Camera Title		Supports up to 12 letters	

	AVD744C	AVD744CD
Video Adjustable	Hue / Saturation / Contrast / Brightness	
Date Display Format	YY/MM/DD, DD/MM/YY & MM/DD/YY	
Daylight Saving	YES	
Power Source (±10%)	DC 19V	
Power Consumption (±10%)	< 42 W	
Operating Temperature	10℃ ~ 40℃ (50℉~104℉)	
Dimensions (mm)**	343(W) × 59(H) × 223(D)	
System Recovery	System auto recovery after power failure	
Optional Peripherals	Keyboard controller	

* The specifications are subject to change without notice.
** Dimensional Tolerance: ±5mm

APPENDIX 2 PIN CONFIGURATION

- **For 16CH Model**


PIN Connection Application
Siren
Magnetic Contact
Solder Side of
DSUB 25 PIN
13 12 11 10 9 8 7 6 5 4 3 2 1
25 24 23 22 21 20 19 18 17 16 15 14

Siren:

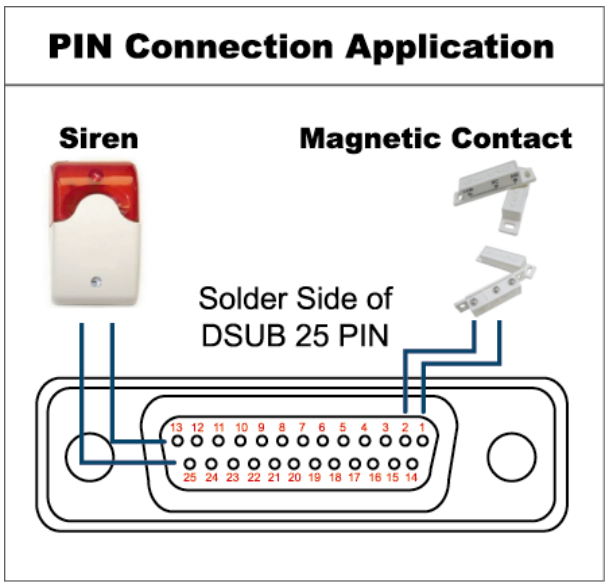
When the DVR is triggered by alarm or motion, the COM connects with NO and the siren with strobe starts wailing and flashing.

Magnetic Contact:

When the magnetic contact is opened, the alarm will be triggered and the recording is on.

<table>
<tr><th>PIN</th><th>FUNCTION</th><th>DESCRIPTION</th></tr>
<tr><td>1</td><td>GND</td><td>GROUND</td></tr>
<tr><td>2~9</td><td>ALARM INPUT</td><td>Connect ALARM INPUT (PIN 2 -- 9) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on.
<table>
<tr><th>PIN</th><th>Alarm</th><th>Corresponding video channel</th></tr>
<tr><td>PIN 2</td><td>1</td><td>CH1</td></tr>
<tr><td>PIN 3</td><td>3</td><td>CH3</td></tr>
<tr><td>PIN 4</td><td>5</td><td>CH5</td></tr>
<tr><td>PIN 5</td><td>7</td><td>CH7</td></tr>
<tr><td>PIN 6</td><td>9</td><td>CH9</td></tr>
<tr><td>PIN 7</td><td>11</td><td>CH11</td></tr>
<tr><td>PIN 8</td><td>13</td><td>CH13</td></tr>
<tr><td>PIN 9</td><td>15</td><td>CH15</td></tr>
</table></td></tr>
<tr><td>10~11</td><td>PIN OFF</td><td>NA</td></tr>
<tr><td>12</td><td>RS485-A</td><td></td></tr>
<tr><td>13</td><td>EXTERNAL ALARM NO</td><td>Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO.
Attention: The voltage restriction is under DC24V 1A.</td></tr>
<tr><td>14</td><td>PIN OFF</td><td>NA</td></tr>
<tr><td>15~22</td><td>ALARM INPUT</td><td>Connect ALARM INPUT (PIN 15 – 22) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on.
<table>
<tr><th>PIN</th><th>Alarm</th><th>Corresponding video channel</th></tr>
<tr><td>PIN 15</td><td>2</td><td>CH2</td></tr>
<tr><td>PIN 16</td><td>4</td><td>CH4</td></tr>
<tr><td>PIN 17</td><td>6</td><td>CH6</td></tr>
<tr><td>PIN 18</td><td>8</td><td>CH8</td></tr>
<tr><td>PIN 19</td><td>10</td><td>CH10</td></tr>
<tr><td>PIN 20</td><td>12</td><td>CH12</td></tr>
<tr><td>PIN 21</td><td>14</td><td>CH14</td></tr>
<tr><td>PIN 22</td><td>16</td><td>CH16</td></tr>
</table></td></tr>
<tr><td>23~23</td><td>PIN OFF</td><td>NA</td></tr>
<tr><td>24</td><td>RS485-B</td><td></td></tr>
<tr><td>25</td><td>EXTERNAL ALARM COM</td><td>Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO.
Attention: The voltage restriction is under DC24V 1A.</td></tr>
</table>

For 8CH Model


PIN Connection Application
Siren
Magnetic Contact
Solder Side of
DSUB 25 PIN
13 12 11 10 9 8 7 6 5 4 3 2 1
25 24 23 22 21 20 19 18 17 16 15 14

Siren:

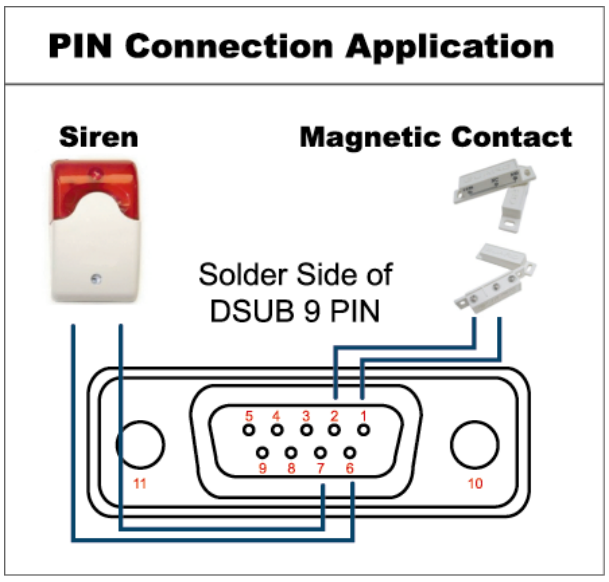
When the DVR is triggered by alarm or motion, the COM connects with NO and the siren with strobe starts wailing and flashing.

Magnetic Contact:

When the magnetic contact is opened, the alarm will be triggered and the recording is on.

PIN	FUNCTION	DESCRIPTION
1	GND	GROUND
2~5	ALARM INPUT	Connect ALARM INPUT (PIN 2 – 5) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. **PIN** / **Alarm** / **Corresponding video channel** PIN 2 / 1 / CH1 PIN 3 / 3 / CH3 PIN 4 / 5 / CH5 PIN 5 / 7 / CH7
6 ~ 11	PIN OFF	NA
12	RS485-A	
13	EXTERNAL ALARM NO.	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.
14	PIN OFF	NA
15~18	ALARM INPUT	Connect ALARM INPUT (PIN 15 – 18) and GND (PIN 1) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on. **PIN** / **Alarm** / **Corresponding video channel** PIN 15 / 2 / CH2 PIN 16 / 4 / CH4 PIN 17 / 6 / CH6 PIN 18 / 8 / CH8
19~23	PIN OFF	NA
24	RS485-B	
25	EXTERNAL ALARM COM	Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO. Attention: The voltage restriction is under DC24V 1A.

- **For 4CH Model**



Siren:
When the DVR is triggered by alarm or motion, the COM connects with NO and the siren with strobe starts wailing and flashing.

Magnetic Contact:
When the magnetic contact is opened, the alarm will be triggered and the recording is on.

<table>
<tr><th>PIN</th><th>FUNCTION</th><th>DESCRIPTION</th></tr>
<tr><td>1~4</td><td>ALARM INPUT</td><td>Connect ALARM INPUT (PIN1 – 4) and GND (PIN5) connector with wires. Once an alarm is triggered, the DVR will start recording and the buzzer will be on.
<table>
<tr><th>PIN</th><th>Alarm</th><th>Corresponding video channel</th></tr>
<tr><td>PIN 1</td><td>1</td><td>CH1</td></tr>
<tr><td>PIN 2</td><td>2</td><td>CH2</td></tr>
<tr><td>PIN 3</td><td>3</td><td>CH3</td></tr>
<tr><td>PIN 4</td><td>4</td><td>CH4</td></tr>
</table></td></tr>
<tr><td>5</td><td>GND</td><td>GROUND</td></tr>
<tr><td>6</td><td>EXTERNAL ALARM COM</td><td>Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO.
Attention: The voltage restriction is under DC24V 1A.</td></tr>
<tr><td>7</td><td>EXTERNAL ALARM NO</td><td>Under the normal operation, COM disconnects with NO. But when any alarm is triggered, COM connects with NO.
Attention: The voltage restriction is under DC24V 1A.</td></tr>
<tr><td>8</td><td>RS485-A</td><td></td></tr>
<tr><td>9</td><td>RS485-B</td><td></td></tr>
<tr><td>10~11</td><td>GND</td><td>GROUND</td></tr>
</table>

APPENDIX 3 COMPATIBLE USB FLASH DRIVE LIST

Please upgrade the firmware of the DVR to the latest version to ensure the accuracy of the following table. If the USB flash drive is not supported by the DVR, the “USB ERROR” message will be shown on the screen.

Note: Please use your PC to format the USB flash drive as “FAT32”.

Note: You can backup up to 2GB video data for one-time USB backup. To backup more data, please set the time & channel(s) you want, and start USB backup again.

MANUFACTURER	MODEL	CAPACITY
Transcend	JFV35	4G
	JFV30	8G
Kingston	DataTraveler	1G
PQI	U172P	4G
Apacer	AH320	2GB
	AH320A	8GB
	AH220	1GB
	AH320	4GB
A-data	RB-18	1GB
Sandisk	Cruzer Micro	2G
	Cruzer Micro	4G
	Cruzer4-pk	2G
Netac	U208	1G
MSI	F200	4G
SONY	Micro Vault Tiny 2G	2G
	Micro Vault Tiny 4G	4G
	Micro Vault Tiny	1G

APPENDIX 4 COMPATIBLE SATA HDD LIST

Please upgrade the firmware of the DVR to the latest version to ensure the accuracy of the following table.

MANUFACTURER	MODEL	CAPACITY	ROTATION
Seagate	ST3320613AS	320GB	7200 rpm
	ST33500320AS	500GB	7200 rpm
	ST3500410SV	500GB	7200 rpm
	ST3750330AS	750GB	7200 rpm
	ST31000340AS	1TB	7200 rpm
	ST31000528AS	1TB	7200 rpm
	ST31000525SV	1TB	7200 rpm
	ST315000341AS	1.5TB	7200 rpm
	ST32000542AS	2TB	7200 rpm
WD	WD3200AAKS	320GB	7200 rpm
	WD5000AACS	500GB	7200 rpm
	WD6400AAKS	640GB	7200 rpm
	WD7500AAKS	750GB	7200 rpm
	WD10EADS	1TB	7200 rpm
	WD10WADS	1TB	7200 rpm
	WD15EADS	1.5TB	7200 rpm
	WD15WADS	1.5TB	7200 rpm
	WD20EADS	2TB	7200 rpm
	WD20EVDS	2TB	7200 rpm
	WD20WADS	2TB	7200 rpm
Maxtor	STM3500320AS	500GB	7200 rpm
	STM3750330AS	750GB	7200 rpm
HITACHI	HDT725032VLA360	320GB	7200 rpm
	HDS721010KLA330	1TB	7200 rpm
	HDS721010CLA332	1TB	7200 rpm
	HDS722020ALA330	2TB	7200 rpm

APPENDIX 5 MAIN MENU STRUCTURE

	QUICK START	GENERAL	CHANNEL TITLE
			EVENT STATUS
			DATE DISPLAY
			DCCS DISPLAY
			MOUSE SENSITIVITY
			PRIORITY *(For AVD744C & 744CD Only)*
			RECORD CONFIG
		TIME SETUP	DATE
			TIME
	DATE SETUP	DATE INFO	DISPLAY DATE OF MODE
			FORMAT
		DAYLIGHT	DAYLIGHT SAVING
	SYSTEM	TOOLS	LANGUAGE
			ADMIN PASSWORD
			OPERATOR PASSWORD
			UPGRADE
			BACKUP CONFIG
			RESTORE CONFIG
		SYSTEM INFO	BAUD RATE
			HOST ID
			R.E.T.R.
			AUTO KEY LOCK
			CLEAR HDD
			RESET DEFAULT
			REMOTE CONTROL ID
			SERIAL TYPE
			VIDEO FORMAT
			VERSION
		BACKUP DATA (USB)	
		BACKUP DATA (DVD) *(For AVD748BD, 746BD, 744BD & 744CD Only)*	
		BACKUP LOG (USB)	
	EVENT INFORMATION	QUICK SEARCH	
		EVENT SEARCH	
		HDD INFO	
		EVENT LOG	
	ADVANCED CONFIG	CAMERA	BRIGHTNESS
			CONTRAST
			SATURATION
			HUE
			COV.
			REC
			CHANNEL TITLE
		DETECTION	LS
			SS
			TS
			MOTION
			ALARM
			AREA
		ALERT	EXT. ALERT
			INT. BUZZER
			KEY BUZZER
			VLOSS BUZZER
			MOTION BUZZER
			ALARM BUZZER
			HDD BUZZER
			ALARM DURATION (SEC)
			HDD NEARLY FULL (GB)

	ADVANCED CONFIG	NETWORK	NETWORK
			SNTP
			FTP
			E-MAIL
			DDNS
		DISPLAY	DE-INTERLACE *(For AVD748BD & 746BD Only)*
			FULL SCREEN DURATION
			QUAD SCREEN DURATION *(For AVD748BD & 746BD Only)*
			CALL SCREEN DURATION
			DISPLAY COVERT
			HDD DISPLAY MODE
			VIDEO OUTPUT *(For AVD744C & 744CD Only)*
			ALPHA BLENDING
			VGA OUTPUT
			VGA DEINTERLACE *(For AVD748BD, 746BD, 744BD & 744B Only)*
			COMPOSITE DEINTERLACE *(For AVD748BD, 746BD, 744BD & 744B Only)*
		RECORD	MANUAL RECORD
			EVENT RECORD
			TIMER RECORD
			PRE-ALARM RECORD
			OVERWRITE
			EVENT RECORD ALL CH
			KEEP DATA LIMIT (DAYS)
			RECORD CONFIG
		DEVICES	
		DCCS	
		IVS	CAMERA *(For AVD748BD & 746BD Only)*
			IVS MODE
			DISPLAY LINE
			SENSITIVITY
			RESET COUNT
			VIRTUAL FENCE AREA
			SCENE CHANGE
			SCENE CHANGE LEVEL
		NOTIFY	GUARD
	SCHEDULE SETTING	RECORD	
		DETECTION	
		ALARM	

APPENDIX 6 DVR BATTERY REPLACEMENT

DVR time reset after power failure, for example, caused by a power outage, will cause the disorder of the recorded data, and users may have problems in searching the event clip they want. To keep the DVR time from resetting, a non-chargeable lithium battery, *CR2032*, is installed in the DVR.

However, the DVR time might still get reset when the DVR battery is low or even running out of power. If so, please replace the DVR battery, CR2032, **right away** as instructed below.

- **How to replace CR2032**

Note: The lithium battery, CR2032, is a non-chargeable battery, and should be purchased separately. Please replace only with the same or equivalent type battery in case of danger.

Step1: Stop all DVR recording **immediately** to prevent the disorder of the recorded data. Then, back up the recorded data if necessary.

Step2: Power off the DVR, and disconnect the DVR power.

Step3: Remove the DVR cover, and find the battery on the mainboard.

Step4: Push the release as indicated below to remove the battery.

Step5: Get a new battery with the side of “CR2032” facing up, and install it to the mainboard.

Step6: Replace the DVR cover and connect to power.

Step7: Set DVR date & time, and resume recording. For details, please refer to “2.4 Date and Time Setting” at page 7, and “5.5.7 RECORD” at page 29.